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101 PROGRAMMING SURPRISES & TRICKS FOR YOUR ATARI® COMPUTER

BY DAVID L. HEISERMAN

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Preface

Sophistication knows no bounds for the enlightened.
—From *Modern Wisdom and Conundrums*

The quotation shown above has no relevance here, but I thought it sounded pretty good. No one reads the preface of a book, anyway—so it really doesn't matter.

Come to think of it, though, this book might at least appear to offer some enlightenment, especially to someone who doesn't know how to work a home computer. It might look terribly sophisticated to someone like that. In fact, you can impress people even more by cutting the cover off a copy of *War and Peace* and gluing it over this one. You'll have room for your lunch in here, too.

No, there isn't much relevance to anything within these pages. And there is no overabundance of reverence for the modern computer world, either.

Let me tell you something: if you are still reading this preface, you belong to a unique group of individuals. For that reason, you deserve to know more about this book. That's what a preface is for.

This book of programs is mainly intended for BASIC programmers who have gotten tired of doing the same old things—and, indeed, such things are getting tiresome these days. I must confess that a couple of these programs are much like the "same old things," but perhaps better presented, easier to enter into your computer, and more fun to use.

"Fun." I just said, "fun." That's what this book is all about. And I don't mean just programs that are fun. I mean the whole idea is fun. In many instances, I don't give you

the slightest hint about what the program does—those are the little jokes I pull on you. Then some of the programs give you a chance to pull some fast ones on your friends (or enemies). Tired of the same old computerized high-low guessing games? Well, how about one that lets you sort of . . . well, load the game in your favor?

Want to show friends how you keep track of the stock market or the world monetary system? There are programs for doing that. Or if you are willing to acknowledge the darker side of your personality, how about programs that let you copy those so-called copy-protected disks and peek into high-class computers anywhere in the country? It's all here, in a manner of speaking.

There are 101 programs for your ATARI Home Computer. Most of them are rather short so that you will not have to labor at the keyboard very long. The programs are written for ATARI BASIC and run equally well on the 800/400 and 800XL/600XL systems. Using a DOS with these programs is nice, but not necessary. About 10 percent of the programs look better if they're portrayed on a color monitor.

Leaf through the pages, find a title that strikes your fancy, and go to work on it. There are enough programs to keep you going that way for quite some time.

People ask, "Did you make up all these programs?" I first respond by saying that you don't have to look very far to find hundreds of examples of unenlightening and unsophisticated programs. But after saying that, I begin feeling bad about knocking the software business, and explain that I had a lot of help from some nice people—namely Robin Yates and Kevin Abnett. Robin formatted the manuscript and played with the programs to her heart's content on our resident ATARI computer. Kevin drafted most of the programs, but he is still grumbling about how I always changed things in them.

We dug up a few ideas, and most of the quotations, from standard library sources and the waste dumpsters in the parking lots of high-tech consulting firms. Then there was this one idea I found on a piece of paper in a water puddle in Indianapolis. I didn't use it in this book, however.

Program 1 WATCH THIS!

"The real danger is not that computers will begin to think like men, but that men will begin to think like computers."

—Sydney J. Harris

```
10 REM ** WATCH THIS **
20 REM
30 DIM C$(10)
40 GRAPHICS 0
50 POKE 752,1
60 FOR N=1 TO 5
70 READ D:C$=CHR$(D)
80 H=N+17
90 GOSUB 270
100 NEXT N
110 FOR N=1 TO 15:FOR T=1 TO 10
120 SOUND 0,20,10,8:NEXT T
130 SOUND 0,10,10,8:FOR T=1 TO 10
140 NEXT T:NEXT N:SOUND 0,0,0,0
150 POSITION 18,20:? CHR$(32)
160 POSITION 18,19:? "O"
170 FOR H=18 TO 23
180 POSITION H-1,19:? CHR$(32)
190 POSITION H,19:? "O"
200 FOR T=1 TO 20:NEXT T
210 NEXT H
220 POSITION 23,19:? CHR$(32)
230 POSITION 23,20:? "O"
240 POSITION 11,23:? "I am your computer";
250 FOR T=1 TO 4000:NEXT T
260 POKE 752,0:GRAPHICS 0:END
270 FOR V=2 TO 20
280 POSITION H,V-1
290 PRINT CHR$(32)
300 POSITION H,V
310 PRINT C$
320 FOR T=1 TO 30:NEXT T
330 NEXT V
340 RETURN
350 DATA 79,72,69,76,76
```

Program 2 MISSION IMPOSSIBLE

"Who knows what evil lurks in the hearts of men?"

—The Shadow

```
10 REM ** MISSION IMPOSSIBLE **
20 REM
30 DIM M$(80),N$(10),T$(17)
```

```
40 OPEN #1,4,0,"K:":POKE 82,0
50 FOR K=1 TO 11:M$(K)=CHR$(32):NEXT K
60 M$(12)="MISSION IMPOSSIBLE":M$(30)=CHR$(155)
70 FOR K=31 TO 70:M$(K)="*":NEXT K
80 PRINT CHR$(125):PRINT M$
90 PRINT "PLEASE ENTER YOUR LAST NAME:"
100 PRINT
110 INPUT N$
120 IF LEN(N$)<1 THEN GOTO 110
140 POSITION 0,10
150 FOR T=1 TO 4
160 RESTORE T*10+790
170 READ T$
180 POKE 85,5:PRINT T;" -- ";T$
190 NEXT T
200 PRINT :PRINT "SELECT A TITLE (1-4):";
210 GET #1,T
220 IF T<ASC("1") OR T>ASC("4") THEN GOTO 210
230 T=T-48
240 RESTORE T*10+790
250 READ T$
260 IF T=4 THEN T$="(WHATEVER)"
270 PRINT CHR$(125):PRINT M$
280 PRINT "GOOD MORNING, ";T$;CHR$(32);N$
290 PRINT :POKE 85,5:PRINT "THIS MAN, DAVID L. HEISERMAN, IS"
300 PRINT "A DANGEROUS CROOK. STRIKE ANY KEY TO"
310 PRINT "SEE A PICTURE OF HIM ...";
320 GET #1,K
330 PRINT CHR$(125)
340 PRINT :PRINT
350 PRINT "         ((()))"
360 PRINT "       (((((((())))"
370 PRINT "      (((((((((())))"
380 PRINT "     (((((((((((((())))"
390 PRINT "    ((((    ()    ))))"
400 PRINT "    ((              ))"
410 PRINT "   ((( <*>   <*>  )))"
420 PRINT "   ((       JL      ))"
430 PRINT "   ((       AA      ))"
440 PRINT " ((       ----       ))"
450 PRINT " ((       XXXX       ))"
460 PRINT " XX  XXXXX  XXXXX  XX"
470 PRINT " XXXX   OOOOOO   XXXX"
480 PRINT "  XX    (::::)    XX"
490 PRINT "   X    (OOOO)    X"
500 PRINT "   XX            XX"
510 PRINT "    XXXXXXXXXXXXXX"
520 PRINT "      XXXXXXXXXXXX"
530 PRINT "        XXXXXXXXXX"
540 POSITION 0,22:PRINT "STRIKE ANY KEY TO CONTINUE ...";
550 GET #1,K
560 PRINT CHR$(125):PRINT M$
570 POKE 752,1
580 PRINT "HE IS GETTING WEALTHY BY WRITING FAKE"
590 PRINT "BOOKS ON COMPUTER PROGRAMMING (SUCH"
600 PRINT "AS THIS ONE).";
```

```
610 FOR T=1 TO 400:NEXT T
620 POSITION 0,16:PRINT "YOUR MISSION, SHOULD YOU DECIDE TO"
630 PRINT "ACCEPT IT, IS TO TRY THE PROGRAMS IN"
640 PRINT "THIS BOOK ... AND HAVE A LOT OF FUN"
650 PRINT "(HE ALREADY GOT YOUR MONEY)."
660 POKE 752,0
670 POSITION 0,21:PRINT "STRIKE ANY KEY TO CONTINUE ...";
680 GET #1,K
690 PRINT CHR$(125):PRINT M$
700 POKE 752,1
710 PRINT "THIS PROGRAM WILL SELF DESTRUCT IN 5"
720 PRINT "SECONDS"
730 FOR T=1 TO 400
740 IF T/15=INT(T/15) THEN SOUND 0,200,0,15:SOUND 0,0,0,0
750 NEXT T
760 PRINT CHR$(125):PRINT M$:POSITION 0,10
770 PRINT "MESSAGE ERASED"
780 FOR K=1 TO 4:PRINT CHR$(253):NEXT K
790 POKE 82,2:POKE 752,0:END
800 DATA MR.
810 DATA MRS.
820 DATA MS.
830 DATA NONE OF THE ABOVE
```

Program 3 MOVING MESSAGE

"The fact that silence is golden may explain why there is so little of it."

—Anonymous

```
10 REM ** MOVING MESSAGE GENERATOR **
20 REM
30 DIM M$(175),N$(250),P$(250)
40 GRAPHICS 0
50 OPEN #1,4,0,"K:":POKE 82,0
60 PRINT CHR$(125)
70 PRINT "        MOVING-MESSAGE GENERATOR"
80 FOR I=1 TO 40:PRINT "*";:NEXT I
90 PRINT
100 PRINT "ENTER ANY MESSAGE UP TO 100 CHARAC-"
110 PRINT "TERS (A COUPLE OF LINES OR LESS)."
120 PRINT
130 PRINT "ENCLOSE THE MESSAGE IN QUOTATION MARKS"
140 PRINT "IF YOU PLAN TO USE ANY COMMAS OR APOS-"
150 PRINT "TROPHES."
160 PRINT
170 INPUT M$
180 IF LEN(M$)<1 THEN 170
190 POSITION 0,20
200 PRINT "Strike any key to begin, and then do"
210 PRINT "it again to end the program ...";
220 GET #1,K
230 PRINT CHR$(125)
240 N$="":P$=""
```

```
250 FOR K=1 TO 38:N$(LEN(N$)+1)=" ":P$(LEN(P$)+1)=" ":NEXT K
260 N$(LEN(N$)+1)=M$
270 M$=N$
280 POKE 752,1:POKE 764,255
290 SETCOLOR 2,0,0
300 POSITION 1,10:FOR K=1 TO 38:PRINT "*";:NEXT K
310 POSITION 1,14:FOR K=1 TO 38:PRINT "*";:NEXT K
320 FOR N=2 TO LEN(M$)
330 P$=M$(N):P$(LEN(P$)+1)=M$(1,N-1)
340 POSITION 1,12:PRINT P$(1,38)
350 FOR T=1 TO 40:NEXT T
360 C=PEEK(764):IF C<>255 THEN 390
370 NEXT N
380 GOTO 320
390 POKE 82,2:POKE 752,0:GRAPHICS 0:END
```

Program 4 CURRENT TIME

"No hand can make the clock strike for me the hours that are passed."

—Byron

```
10 REM ** CURRENT TIME **
20 REM
30 DIM M$(40)
40 POKE 82,0
50 FOR K=1 TO 40:M$(K)="*":NEXT K
60 PRINT CHR$(125):PRINT M$:PRINT
70 PRINT "SET THE CURRENT TIME:"
80 TRAP 360
90 PRINT "ENTER THE CURRENT HOUR (1-12) ";
100 INPUT HR
110 IF HR>12 OR HR<1 THEN PRINT "TRY AGAIN ...":GOTO 100
120 PRINT :PRINT "ENTER THE CURRENT MINUTE (0-59) ";
130 INPUT MN
140 IF MN>59 OR MN<0 THEN PRINT "TRY AGAIN ...":GOTO 120
150 SC=(HR*60*60+MN*60)*60
160 S1=INT(SC/65536):SC=SC-S1*65536
170 S2=INT(SC/256):SC=SC-S2*256
180 POKE 18,S1:POKE 19,S2:POKE 20,SC
190 GRAPHICS 2
200 PRINT CHR$(125):PRINT M$;
210 PRINT "STRIKE ANY KEY TO DO SOMETHING ELSE";
220 SEC=INT((PEEK(18)*65536+PEEK(19)*256+PEEK(20))/60)
230 HR=INT(SEC/3600):SEC=SEC-HR*3600
240 IF HR=13 THEN HR=1:MN=0:GOTO 150
250 MN=INT(SEC/60)
260 SEC=SEC-MN*60
270 IF PEEK(764)=255 THEN 290
280 GRAPHICS 0:POKE 764,255:END
290 POSITION 6,4
300 PRINT #6;HR;":";
310 IF MN<10 THEN PRINT #6;CHR$(48);:PRINT #6;MN;":";:GOTO 330
320 PRINT #6;MN;":";
```

```
330 IF SEC<10 THEN PRINT #6;CHR$(48);:PRINT #6;SEC:GOTO 220
340 PRINT #6;SEC
350 GOTO 220
360 PRINT "INVALID ENTRY. PLEASE TRY AGAIN..."
370 TRAP 360
380 T=PEEK(187)*256+PEEK(186)
390 GOTO T
```

Program 5 PERPETUAL CALENDAR

"Like sands through the hourglass, so are the days of our lives."

—NBC's *Days of Our Lives*

```
10 REM ** PERPETUAL CALENDAR **
20 REM
30 DIM M$(80),D$(10),XX$(40)
40 OPEN #1,4,0,"K:":POKE 82,0
50 FOR K=1 TO 11
60 M$(LEN(M$)+1)=CHR$(32)
70 NEXT K
80 M$(12)="PERPETUAL CALENDAR"
90 M$(30)=CHR$(155)
100 FOR K=1 TO 40:M$(LEN(M$)+1)="*":NEXT K
110 GRAPHICS 0
120 PRINT CHR$(125):PRINT M$
130 PRINT
140 PRINT "ENTER A YEAR (1500-2000) ";
150 GOSUB 650:YR=XX
160 IF YR<=2000 AND YR>=1500 THEN 180
170 PRINT "BETWEEN 1500 AND 2000":GOTO 150
180 PRINT
190 PRINT "ENTER A MONTH (1-12)";
200 GOSUB 650:MT=XX
210 IF MT>=1 AND MT<=12 THEN 230
220 PRINT "BETWEEN 1 AND 12":GOTO 200
230 PRINT
240 PRINT "ENTER THE DAY OF THE MONTH (1-31) ";
250 GOSUB 650:DT=XX
260 IF DT>=1 AND DT<=31 THEN 280
270 PRINT "BETWEEN 1 AND 31 ";:GOTO 250
280 PRINT CHR$(125);M$
290 POKE 752,1
300 PRINT :PRINT "PLEASE WAIT A MOMENT ..."
310 YD=YR-1804:DC=0
320 FOR K=1 TO YD
330 DC=DC+365
340 IF K/4=INT(K/4) THEN DC=DC+1
350 NEXT K
360 IF YR/4<>INT(YR/4) THEN 380
370 IF MT<=2 THEN DC=DC-1
380 DC=DC+DT
390 MO=MT
400 RESTORE 640
```

```
410 FOR N=1 TO MO:READ D:NEXT N
420 DC=DC+D
430 XG=7*INT(DC/7)
440 DN=DC-XG
450 IF DN=0 THEN DN=7
460 RESTORE 620
470 FOR N=1 TO DN:READ D$:NEXT N
480 PRINT CHR$(125):PRINT M$:PRINT
490 POKE 85,14
500 PRINT MO;"-";DT;"-";YR
510 PRINT
520 POKE 85,10
530 PRINT "FALLS ON A ";D$
540 POSITION 0,20
550 POKE 752,0
560 PRINT "DO YOU WANT ANOTHER DATE (Y/N)? ";
570 GET #1,K
580 IF K=89 OR K-32=89 THEN 120
590 IF  NOT (K=78 OR K-32=78) THEN 570
600 PRINT CHR$(125):POKE 82,2
610 GRAPHICS 0:END
620 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDAY
630 DATA THURSDAY,FRIDAY,SATURDAY,SUNDAY
640 DATA 0,31,59,90,120,151,181,212,243,273,304,334
650 INPUT XX$
660 FOR NX=1 TO LEN(XX$)
670 IF XX$(NX,NX)>=")" AND XX$(NX,NX)<="9" THEN 690
680 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 650
690 NEXT NX
700 XX=VAL(XX$)
710 RETURN
```

Program 6 HOME RECIPES

"Bon appetit!"

—Julia Child

Are you getting tired of meals that are prepared from the same old recipes? Here is your chance to load your recipe file with an endless variety of new, creative, and challenging gastronomy.

```
10 REM ** HOME RECIPES **
20 REM
30 DIM M$(80),A$(500),E$(500),I$(500)
40 DIM Q$(500),A(50,2),E(50,2),I(50,2)
50 DIM Q(50,2),N$(20),T$(20),X$(40),SP$(40)
60 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
70 M$(15)="HOME RECIPES":M$(27)=CHR$(155)
80 FOR K=1 TO 40
90 M$(27+K)=CHR$(37):SP$(K)=CHR$(32)
100 NEXT K
110 POKE 82,0:OPEN #1,4,0,"K:"
```

```
120 GRAPHICS 0
130 PRINT CHR$(125);M$
140 PRINT
150 PRINT "Hi. What's your first name";
160 INPUT N$
170 L=LEN(N$)
180 FOR N=1 TO L:CH=ASC(N$(N,N))
190 IF CH>90 THEN CH=CH-32
200 N$(N,N)=CHR$(CH)
210 NEXT N
220 IF L>1 AND L<16 THEN 250
230 PRINT "You're kidding. Try again."
240 PRINT :GOTO 160
250 T$="ACTION":GOSUB 810
260 A$=I$
270 FOR A=1 TO N-1
280 A(A,1)=I(A,1):A(A,2)=I(A,2)
290 NEXT A
300 NA=N-1
310 T$="QUANTITY":GOSUB 810
320 Q$=I$
330 FOR Q=1 TO N-1
340 Q(Q,1)=I(Q,1):Q(Q,2)=I(Q,2)
350 NEXT Q
360 NQ=N-1
370 T$="INGREDIENT":GOSUB 810
380 NI=N-1
390 NR=1
400 N$(LEN(N$)+1)="'S RECIPE NO."
410 PRINT CHR$(125);N$;CHR$(32);NR
420 PRINT M$(28)
430 POKE 752,1
440 FOR NL=1 TO INT(8*RND(1)+6)
450 X=INT(NA*RND(1)+1)
460 POKE 85,5
470 PRINT A$(A(X,1),A(X,2));
480 X=INT(NQ*RND(1)+1)
490 PRINT CHR$(32);Q$(Q(X,1),Q(X,2));
500 X=INT(NI*RND(1)+1)
510 PRINT CHR$(32);I$(I(X,1),I(X,2))
520 NEXT NL
530 POSITION 0,20
540 POKE 752,0
550 PRINT "Strike the SPACE BAR to see a different"
560 PRINT "recipe (or the X key to do something"
570 PRINT "else) ...";
580 POKE 764,255
590 GET #1,K
600 IF K=32 THEN NR=NR+1:GOTO 410
610 IF  NOT (K=88 OR K=120) THEN 580
620 POKE 82,2:GRAPHICS 0:END
630 N=1:CV=PEEK(84)
640 POKE 85,2:PRINT T$;" #";N;":";
650 CH=PEEK(85)
660 PRINT SP$(1,39-CH);
670 POKE 85,CH
```

```
680 INPUT X$
690 IF PEEK(84)>21 THEN POSITION 0,CV
700 IF LEN(X$)<1 THEN 640
710 IF X$<>"***" THEN 740
720 IF N>1 THEN 800
730 PRINT "Enter at least one ";T$:GOTO 640
740 X=LEN(X$)-1
750 I(N,1)=LEN(I$)+1:I(N,2)=I(N,1)+X
760 I$(LEN(I$)+1)=X$
770 N=N+1
780 IF N>50 THEN 800
790 GOTO 640
800 RETURN
810 PRINT CHR$(125);M$
820 PRINT T$;" ENTRY PHASE.":PRINT
830 PRINT "Enter at least one, and as many as 50"
840 PRINT "expressions such as:":PRINT
850 FOR N=1 TO 5
860 READ I$:POKE 85,5:PRINT I$
870 NEXT N
880 I$=""
890 PRINT :PRINT "Enter *** to end your list."
900 PRINT :GOSUB 630:RETURN
910 DATA Stir in,Blend,Mash,Bake,Add
920 DATA 1 cup,2 tablespoons,1 pinch,4 quarts,1 package
930 DATA frozen peas,horseradish,sugar,salt,orange juice
```

Program 7 ALARM CLOCK

"We do more before 9 a.m. than most people do all day."

—U.S. Army recruiting slogan

```
10 REM ** ALARM CLOCK **
20 REM
30 REM
40 DIM M$(80)
50 GRAPHICS 0
60 POKE 82,0
70 FOR K=1 TO 14:M$(LEN(M$)+1)=CHR$(32):NEXT K
80 M$(15)="ALARM CLOCK":M$(26)=CHR$(155)
90 FOR K=1 TO 40:M$(LEN(M$)+1)="*":NEXT K
100 PRINT CHR$(125):PRINT M$:PRINT
110 PRINT "ADJUST DESIRED ALARM VOLUME LEVEL."
120 PRINT :PRINT
130 PRINT "THEN STRIKE THE SPACE BAR TO SET"
140 PRINT "THE CLOCK."
150 POKE 764,255:AF=1
160 GOSUB 730
170 SOUND 0,0,0,0:SOUND 1,0,0,0
180 AF=0
190 PRINT CHR$(125):PRINT M$:PRINT
200 TRAP 690
210 PRINT "ENTER THE CURRENT HOUR (1-12)";
```

```
220 INPUT HR
230 IF HR>=1 AND HR<=12 THEN 250
240 PRINT "(1..12)":GOTO 220
250 PRINT
260 PRINT "ENTER THE CURRENT MINUTE (0-59)";
270 INPUT MN
280 IF MN>=0 AND MN<=59 THEN 300
290 PRINT "TRY AGAIN":GOTO 270
300 PRINT
310 PRINT :PRINT :PRINT
320 PRINT "ENTER THE ALARM HOUR (1-12)";
330 INPUT AH
340 IF AH>=1 AND AH<=12 THEN 360
350 PRINT "TRY AGAIN":GOTO 330
360 PRINT
370 PRINT "ENTER THE ALARM MINUTE (0-59)";
380 INPUT AN
390 IF AN>=0 AND AN<=59 THEN 420
400 PRINT "TRY AGAIN":GOTO 380
410 POKE 764,255
420 SC=(HR*60*60+MN*60)*60
430 S1=INT(SC/65536):SC=SC-S1*65536
440 S2=INT(SC/256):SC=SC-S2*256
450 POKE 18,S1:POKE 19,S2:POKE 20,SC
460 GRAPHICS 2
470 PRINT CHR$(125):PRINT M$;
480 PRINT "ALARM IS SET FOR  ";AH;":";
490 IF AN<10 THEN PRINT "0";
500 PRINT AN
510 PRINT "<SPACE>=ALARM OFF  <RETURN>=KILL CLOCK";
520 SEC=INT((PEEK(18)*65536+PEEK(19)*256+PEEK(20))/60)
530 HR=INT(SEC/3600):SEC=SEC-HR*3600
540 IF HR=13 THEN HR=1:MN=0:GOTO 420
550 GOSUB 820
560 MN=INT(SEC/60)
570 SEC=SEC-MN*60
580 POSITION 6,4
590 PRINT #6;HR;":";
600 IF MN>=10 THEN 620
610 PRINT #6;CHR$(48);:PRINT #6;MN;":";:GOTO 630
620 PRINT #6;MN;":";
630 IF AH=HR AND MN=AN AND PEEK(764)=255 THEN GOSUB 730
640 IF SEC>=10 THEN 660
650 PRINT #6;CHR$(48);:PRINT #6;SEC:GOTO 520
660 PRINT #6;SEC
670 GOSUB 820
680 GOTO 520
690 PRINT "INCORRECT ENTRY  PLEASE TRY AGAIN"
700 TRAP 690
710 T=PEEK(187)*256+PEEK(186)
720 GOTO T
730 IF PEEK(764)=33 THEN RETURN
740 FOR T=15 TO 0 STEP -1
750 IF AF=1 THEN 770
760 SETCOLOR 4,0,T
770 SOUND 0,100,10,T
```

```
780 SOUND 1,50,10,T
790 SOUND 2,200,10,T
800 NEXT T
810 GOTO 730
820 C=PEEK(764)
830 IF C<>12 THEN RETURN
840 POKE 82,2:GRAPHICS 0:END
```

Program 8 TIPSY TRANSLATOR

"Urp . . ."

—Overheard in a bar in Cleveland

```
10 REM ** TIPSY TRANSLATOR **
20 REM
30 OPEN #1,4,0,"K:":POKE 82,0
40 DIM MH$(80),M1$(110),M2$(110),M$(110)
50 DIM MX$(100),MY$(100)
60 FOR K=1 TO 10:MH$(K)=CHR$(32):NEXT K
70 MH$(11)="TIPSY TRANSLATOR":MH$(27)=CHR$(155)
80 FOR K=28 TO 67:MH$(K)="=":NEXT K
90 PRINT CHR$(125):PRINT MH$:PRINT
100 PRINT
110 PRINT "THIS IS A VERY SOPHISTICATED PROGRAM"
120 PRINT "IT TRANSLATES THE WORDS OF A SOBER"
130 PRINT "INDIVIDUAL INTO THE MUTTERINGS OF ONE"
140 PRINT "WHO HAS TIPPED A FEW TOO MANY GLASSES."
150 POSITION 1,22:PRINT "STRIKE ANY KEY TO BEGIN ... ";
160 GET #1,K
170 PRINT CHR$(125):PRINT MH$:PRINT
180 PRINT
190 PRINT "ENTER AN ENGLISH PHRASE, SENTENCE,"
200 PRINT "OR PARAGRAPH OF 100 CHARACTERS OR"
210 PRINT "LESS. ENCLOSE THE ENTIRE ENTRY IN"
220 PRINT "QUOTES IF YOU WISH TO USE ANY COMMAS."
230 PRINT :PRINT
240 INPUT M1$:IF LEN(M1$)<1 THEN GOTO 240
250 IF LEN(M1$)<=100 THEN 280
260 PRINT "SHORRY. TOO LONG. TRY AGAIN ..."
270 GOTO 240
280 PRINT CHR$(125)
290 PRINT MH$
300 PRINT
310 PRINT "ORIGINAL ENGLISH VERSION:":PRINT
320 MX$=M1$:GOSUB 570:M1$=MX$
330 PRINT
340 M2$=""
350 FOR N=1 TO LEN(M1$)
360 M$=M1$(N,N)
370 IF M$="F" THEN M$="PH":GOTO 430
380 IF M$="S" THEN M$="SH":GOTO 430
390 M$=M1$(N,N)
400 IF M$<>"GH" THEN 420
```

```
410 M2$(LEN(M2$)+1)="F":N=N+1:GOTO 440
420 M$=M1$(N,N)
430 M2$(LEN(M2$)+1)=M$
440 NEXT N
450 PRINT :PRINT
460 PRINT "DRUNKEN TRANSLATION:"
470 PRINT
480 MX$=M2$:GOSUB 570
490 PRINT :PRINT
500 POSITION 0,20
510 PRINT "HIT RETURN TO DO ANOTHER TRANSLATION"
520 PRINT "(OR STRIKE THE X KEY TO END)"
530 GET #1,K
540 IF K=155 THEN GOTO 170
550 IF  NOT (K=88 OR K=120) THEN 530
560 POKE 82,2:GRAPHICS 0:END
570 MY$=""
580 FOR N=1 TO LEN(MX$)
590 C=ASC(MX$(N))
600 IF C>90 THEN C=C-32
610 MY$(N)=CHR$(C)
620 IF C=32 AND PEEK(85)>30 THEN PRINT :GOTO 640
630 PRINT CHR$(C);
640 NEXT N
650 MX$=MY$
660 RETURN
```

Program 9 ENGLISH-BOSTONEESE

"In Boston they ask, How much does he know? In New York, How much is he worth? In Philadelphia, Who were his parents?"

—Mark Twain

```
10 REM ** ENGLISH-TO-BOSTONEESE TRANSLATOR **
20 DIM MH$(80),M$(110),M1$(110),M2$(110),MA$(1),MB$(1)
30 DIM MX$(110),MY$(110)
40 OPEN #1,4,0,"K:"
50 POKE 82,0
60 MH$(1)=CHR$(32)
70 MH$(2)="ENGLISH-TO-BOSTONEESE TRANSLATOR":MH$(33)=CHR$(155)
80 FOR N=1 TO 40:MH$(LEN(MH$)+1)="=":NEXT N
90 PRINT CHR$(125):PRINT MH$
100 PRINT
110 PRINT "THIS IS A LANGUAGE TRANSLATION PROGRAM"
120 PRINT "THAT TRANSLATES ORDINARY ENGLISH INTO"
130 PRINT "AN EQUIVALENT FORM THAT IS GENERALLY"
140 PRINT "USED BY PEOPLE IN THE BOSTON AREA."
150 PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
160 PRINT "TUNITY TO COMPARE THIS UNIQUE DIALECT"
170 PRINT "WITH YOUR OWN."
180 POSITION 0,20
190 PRINT "STRIKE ANY KEY TO BEGIN ...";
200 GET #1,K
```

```
210 PRINT CHR$(125):PRINT MH$
220 PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
230 PRINT "OR PARAGRAPH OF 100 CHARACTERS OR"
240 PRINT "LESS."
250 PRINT :PRINT
260 INPUT M1$
270 IF LEN(M1$)<1 THEN 260
280 IF LEN(M1$)<=100 THEN 300
290 PRINT "TOO LONG. TRY AGAIN ...":GOTO 260
300 PRINT CHR$(125):PRINT MH$
310 PRINT :PRINT
320 PRINT "  ORGINAL ENGLISH VERSION "
330 PRINT
340 MX$=M1$:GOSUB 610:M1$=MX$
350 POSITION 0,20:PRINT "PLEASE WAIT A MOMENT ...";
360 M2$=""
370 FOR N=1 TO LEN(M1$)
380 IF LEN(M1$)-N=0 THEN GOTO 410
390 IF M1$(N,N+1)="AR" THEN M$="AH":N=N+1:GOTO 430
400 IF M1$(N,N+1)="ER" THEN M$="A":GOTO 430
410 IF M1$(N)="O" THEN M$="AH":GOTO 430
420 M$=M1$(N,N)
430 M2$(LEN(M2$)+1)=M$
440 NEXT N
450 POSITION 0,20
460 PRINT "STRIKE ANY KEY TO SEE THE"
470 PRINT "BOSTONEESE VERSION ...";
480 GET #1,K
490 PRINT CHR$(125):PRINT MH$
500 PRINT :PRINT
510 PRINT "  BOSTONEESE TRANSLATION:":PRINT
520 MX$=M2$:GOSUB 610
530 POSITION 0,21
540 PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
550 PRINT "TRANSLATION. (OR STRIKE THE X KEY"
560 PRINT "TO END THE PROGRAM ...";
570 GET #1,K
580 IF K=155 THEN GOTO 210
590 IF  NOT (K=88 OR K=120) THEN 570
600 POKE 82,2:GRAPHICS 0:END
610 MY$=""
620 FOR N=1 TO LEN(MX$)
630 C=ASC(MX$(N))
640 IF C>90 THEN C=C-32
650 MY$(N)=CHR$(C)
660 IF C=32 AND PEEK(85)>30 THEN PRINT :GOTO 680
670 PRINT CHR$(C);
680 NEXT N
690 MX$=MY$
700 RETURN
```

Program 10 ENGLISH-BROOKLYNEESE

"Wanna buy a bridge?"

—Anonymous

Notice: Similarities between this dialect and that of certain neighborhoods in Philadelphia is purely coincidental. However, the author expects to receive windfall roylaties from anyone using this program to generate dialogue for movies titled *ROCKY IV* through *ROCKY XXIV.*

```
10 REM ** ENGLISH-TO-BROOKLYNEESE TRANSLATOR **
20 OPEN #1,4,0,"K:":POKE 82,0
30 DIM MH$(80),M1$(120),M2$(120),M$(120)
40 DIM MX$(120),MY$(120)
50 MH$="  ENGLISH TO BROOKLYNEESE TRANSLATOR"
60 MH$(37)=CHR$(155)
70 FOR K=38 TO 77:MH$(K)="=":NEXT K
80 PRINT CHR$(125):PRINT MH$:PRINT
90 PRINT
100 PRINT "THIS IS A LANGUAGE TRANSLATION PROGRAM"
110 PRINT "THAT TRANSFORMS ORDINARY ENGLISH INTO"
120 PRINT "AN EQUIVALENT FORM THAT IS GENERALLY"
130 PRINT "USED BY PEOPLE FOR THE BROOKLYN, NEW"
140 PRINT "YORK, AREA."
150 PRINT :PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
160 PRINT "TUNITY COMPARE THIS UNIQUE DIALECT WITH"
170 PRINT "YOUR OWN."
180 POSITION 1,22:PRINT "STRIKE ANY KEY TO BEGIN ... ";
190 GET #1,K
200 PRINT CHR$(125):PRINT MH$
210 PRINT
220 PRINT "ENTER AN ENGLISH PHRASE, SENTENCE,"
230 PRINT "OR PARAGRAPH OF 100 CHARACTERS OR"
240 PRINT "LESS."
250 PRINT :PRINT
260 INPUT M1$:IF LEN(M1$)<1 THEN GOTO 260
270 IF LEN(M1$)<=100 THEN 290
280 PRINT "TOO LONG. TRY AGAIN ...":GOTO 260
290 PRINT CHR$(125)
300 PRINT MH$
310 PRINT
320 PRINT "ORIGINAL ENGLISH VERSION:":PRINT
330 MX$=M1$:GOSUB 580:M1$=MX$
340 PRINT
350 POSITION 0,20
360 PRINT "PLEASE WAIT A MOMENT ...";
370 M2$=""
380 FOR N=2 TO LEN(M1$)
390 IF M1$(N-1,N)="TH" THEN M$="D":N=N+1:GOTO 410
400 M$=M1$(N-1,N-1)
410 M2$(LEN(M2$)+1)=M$
420 NEXT N
430 M2$(LEN(M2$)+1)=M1$(N-1,N-1)
440 POSITION 0,20
450 PRINT "STRIKE ANY KEY TO SEE THE"
460 PRINT "BROOKLYNEESE VERSION ...";
470 GET #1,K
480 PRINT CHR$(125):PRINT MH$
490 PRINT "BROOKLYNEESE VERSION:":PRINT
500 MX$=M2$:GOSUB 580
510 POSITION 0,21
```

```
520 PRINT "HIT RETURN TO DO ANOTHER TRANSLATION"
530 PRINT "(OR STRIKE THE X KEY TO END)";
540 GET #1,K
550 IF K=155 THEN GOTO 200
560 IF  NOT (K=88 OR K=120) THEN 540
570 POKE 82,2:GRAPHICS 0:END
580 MY$=""
590 FOR N=1 TO LEN(MX$)
600 C=ASC(MX$(N))
610 IF C>90 THEN C=C-32
620 MY$(N)=CHR$(C)
630 IF C=32 AND PEEK(85)>30 THEN PRINT :GOTO 650
640 PRINT CHR$(C);
650 NEXT N
660 MX$=MY$
670 RETURN
```

Program 11 ENGLISH-GERMAN-ENGLISH

"Was duckt un zuckt ihr?"

—Overheard in drugstore in Stuttgart

```
10 REM ** ENGLISH-GERMAN-ENGLISH TRANSLATOR **
20 REM
30 DIM MH$(80),M$(120),M1$(120),M2$(120),MA$(1),MB$(1)
40 DIM MX$(120),MY$(120)
50 OPEN #1,4,0,"K:":POKE 82,0
60 FOR N=1 TO 3:MH$(N)=CHR$(32):NEXT N
70 MH$(4)="ENGLISH-GERMAN-ENGLISH TRANSLATOR"
80 MH$(LEN(MH$)+1)=CHR$(155)
90 FOR N=1 TO 40:MH$(LEN(MH$)+1)="=":NEXT N
100 PRINT CHR$(125):PRINT MH$
110 PRINT
120 PRINT "THIS IS AN INCREDIBLY SOPHISTICATED"
130 PRINT "LANGUAGE TRANSLATION PROGRAM. IT NOT"
140 PRINT "ONLY TRANSLATES FROM ENGLISH TO GERMAN,"
150 PRINT "BUT TRANSLATES GERMAN BACK TO ENGLISH"
160 PRINT "FOR YOU.":PRINT
170 PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
180 PRINT "TUNITY TO SEE HOW GERMAN-SPEAKING"
190 PRINT "PEOPLE PERCEIVE YOUR WORDS."
200 POSITION 0,20
210 PRINT "STRIKE ANY KEY TO BEGIN ...";
220 GET #1,K
230 PRINT CHR$(125):PRINT MH$
240 PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
250 PRINT "OR PARAGRAPH OF 100 CHARACTERS OR"
260 PRINT "LESS."
270 PRINT :PRINT
280 INPUT M1$:IF LEN(M1$)<1 THEN 280
290 IF LEN(M1$)<=100 THEN 310
300 PRINT "TOO LONG. TRY AGAIN ...":GOTO 280
310 PRINT CHR$(125):PRINT MH$
320 PRINT "ORIGINAL ENGLISH VERSION"
330 PRINT
```

```
340 MX$=M1$:GOSUB 740:M1$=MX$
350 POSITION 0,20
360 PRINT "PLEASE WAIT A MOMENT ...";
370 M2$=""
380 FOR N=1 TO LEN(M1$)
390 IF N>1 THEN MB$=M1$(N-1)
400 IF  NOT (N=1 OR MB$=CHR$(32)) THEN GOTO 470
410 IF LEN(M1$)-N<4 THEN GOTO 440
420 IF M1$(N,N+3)="THE " THEN M$="DER ":N=N+3:GOTO 540
430 IF M1$(N,N+3)="AND " THEN M$="UND ":N=N+3:GOTO 540
440 IF LEN(M1$)-N<3 THEN GOTO 470
450 IF M1$(N,N+2)="IS " THEN M$="IST":GOTO 540
460 IF M1$(N,N+1)="QU" THEN GOTO 730
470 M$=M1$(N,N)
480 IF N>=LEN(M1$)-1 THEN GOTO 540
490 MA$=M1$(N,N)
500 IF ASC(MA$)=32 THEN GOTO 530
510 IF M$="V" THEN M$="W":GOTO 540
520 IF M$="W" THEN M$="V"
530 IF M$="D" THEN M$="T"
540 M2$(LEN(M2$)+1)=M$
550 NEXT N
560 POSITION 0,20
570 PRINT "STRIKE ANY KEY TO SEE THE"
580 PRINT "GERMAN-ENGLISH VERSION ...";
590 GET #1,K
600 PRINT CHR$(125):PRINT MH$
610 PRINT
620 PRINT "GERMAN-ENGLISH TRANSLATION"
630 PRINT
640 MX$=M2$:GOSUB 740
650 POSITION 0,21
660 PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
670 PRINT "TRANSLATION (OR STRIKE THE X KEY"
680 PRINT "TO END THE PROGRAM) ...";
690 GET #1,K
700 IF K=155 THEN GOTO 230
710 IF  NOT (K=88 OR K=120) THEN 690
720 POKE 82,2:GRAPHICS 0:END
730 M$="KV":N=N+1:GOTO 540
740 MY$=""
750 FOR N=1 TO LEN(MX$)
760 C=ASC(MX$(N))
770 IF C>90 THEN C=C-32
780 MY$(N)=CHR$(C)
790 IF C=32 AND PEEK(85)>30 THEN PRINT :GOTO 810
800 PRINT CHR$(C);
810 NEXT N
820 MX$=MY$
830 RETURN
```

Program 12 ENGLISH-JAPANESE-ENGLISH

"Ha-sha she yendo?"

—Overheard on a school bus in Albuquerque

```
10 REM ** ENGLISH-SPANISH-ENGLISH TRANSLATION PROGRAM **
20 OPEN #1,4,0,"K:":POKE 82,0
30 DIM S$(42),MH$(40),M$(120),M1$(120),M2$(120),MB$(1)
40 DIM MX$(120),MY$(120)
50 FOR N=1 TO 40:S$(LEN(S$)+1)="=":NEXT N
60 S$(41)=CHR$(155)
70 MH$(1)=CHR$(32):MH$(2)=CHR$(32)
80 MH$(3)="ENGLISH-SPANISH-ENGLISH TRANSLATOR"
90 PRINT CHR$(125):PRINT MH$:PRINT S$
100 PRINT "THIS IS AN INCREDIBLY SOPHISTICATED"
110 PRINT "LANGUAGE-TRANSLATION PROGRAM IT NOT"
120 PRINT "ONLY TRANSLATES FROM ENGLISH TO SPAN-"
130 PRINT "ISH, BUT TRANSLATES THE SPANISH BACK"
140 PRINT "INTO ENGLISH FOR YOU. YOU HAVE, IN"
150 PRINT "ESSENCE, A FINE OPPORTUNITY TO SEE"
160 PRINT "HOW SPANISH-SPEAKING PEOPLE PERCEIVE"
170 PRINT "YOUR WORDS."
180 POSITION 0,20
190 PRINT "STRIKE ANY KEY TO BEGIN ...";
200 GET #1,K
210 PRINT CHR$(125):PRINT MH$:PRINT S$
220 PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
230 PRINT "OR PARAGRAPH OF 100 CHARACTERS OR"
240 PRINT "LESS."
250 PRINT
260 TRAP 300
270 INPUT M1$
280 IF LEN(M1$)<1 THEN 270
290 IF LEN(M1$)<=100 THEN 310
300 PRINT "TOO LONG. TRY AGAIN ...":GOTO 270
310 PRINT CHR$(125):PRINT MH$:PRINT S$
320 PRINT "ORIGINAL ENGLISH VERSION:":PRINT
330 MX$=M1$:GOSUB 620:M1$=MX$
340 POSITION 0,20
350 PRINT "PLEASE WAIT A MOMENT ...";
360 M2$="":MB$=CHR$(32)
370 FOR N=1 TO LEN(M1$)
380 M$=M1$(N,N)
390 IF N>1 THEN MB$=M1$(N-1)
400 IF  NOT (N=1 OR ASC(MB$)=32) THEN GOTO 430
410 IF M$="S" THEN M2$(LEN(M2$)+1)="E":M2$(LEN(M2$)+1)=M$:GOTO 440
420 IF M$="I" THEN M2$(LEN(M2$)+1)="EE":GOTO 440
430 M2$(LEN(M2$)+1)=M$
440 NEXT N
450 NEXT N
460 POSITION 0,20
470 PRINT "STRIKE ANY KEY TO SEE THE"
480 PRINT "JAPANESE-ENGLISH VERSION ...";
490 GET #1,K
500 PRINT CHR$(125)
510 PRINT S$:PRINT
520 PRINT "JAPANESE-ENGLISH TRANLATION:"
530 PRINT
540 IF INT(3*RND(1))<>0 THEN 560
550 PRINT "AHH, SO!"
```

```
560 MX$=M2$:GOSUB 650
570 POSITION 1,20
580 PRINT "STRIKE RETURN TO DO ANOTHER"
590 PRINT "TRANSLATION (OR STRIKE THE X KEY TO END"
600 PRINT "THE PROGRAM) ...";
610 GET #1,K
620 IF K=155 THEN GOTO 210
630 IF  NOT (K=88 OR K=120) THEN 610
640 POKE 82,2:GRAPHICS 0:END
650 MY$=""
660 FOR N=1 TO LEN(MX$)
670 C=ASC(MX$(N))
680 IF C>90 THEN C=C-32
690 MY$(N)=CHR$(C)
700 IF C=32 AND PEEK(85)>30 THEN PRINT :GOTO 720
710 PRINT CHR$(C);
720 NEXT N
730 MX$=MY$
740 RETURN
```

Program 13 ENGLISH-SPANISH-ENGLISH

"Tu llevas espinica entre los dientes!"

—Overheard in a restaurant in Boca Raton

```
10 REM ** ENGLISH-SPANISH-ENGLISH TRANSLATION PROGRAM **
20 OPEN #1,4,0,"K:":POKE 82,0
30 DIM S$(42),MH$(40),M$(120),M1$(120),M2$(120),MB$(1)
40 DIM MX$(120),MY$(120)
50 FOR N=1 TO 40:S$(LEN(S$)+1)="=":NEXT N
60 S$(41)=CHR$(155)
70 MH$(1)=CHR$(32):MH$(2)=CHR$(32)
80 MH$(3)="ENGLISH-SPANISH-ENGLISH TRANSLATOR"
90 PRINT CHR$(125):PRINT MH$:PRINT S$
100 PRINT "THIS IS AN INCREDIBLY SOPHISTICATED"
110 PRINT "LANGUAGE-TRANSLATION PROGRAM IT NOT"
120 PRINT "ONLY TRANSLATES FROM ENGLISH TO SPAN-"
130 PRINT "ISH, BUT TRANSLATES THE SPANISH BACK"
140 PRINT "INTO ENGLISH FOR YOU. YOU HAVE, IN"
150 PRINT "ESSENCE, A FINE OPPORTUNITY TO SEE"
160 PRINT "HOW SPANISH-SPEAKING PEOPLE PERCEIVE"
170 PRINT "YOUR WORDS."
180 POSITION 0,20
190 PRINT "STRIKE ANY KEY TO BEGIN ...";
200 GET #1,K
210 PRINT CHR$(125):PRINT MH$:PRINT S$
220 PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
230 PRINT "OR PARAGRAPH OF 100 CHARACTERS OR"
240 PRINT "LESS."
250 PRINT
260 TRAP 300
270 INPUT M1$
```

```
280 IF LEN(M1$)<1 THEN 270
290 IF LEN(M1$)<=100 THEN 310
300 PRINT "TOO LONG. TRY AGAIN ...":GOTO 270
310 PRINT CHR$(125):PRINT MH$:PRINT S$
320 PRINT "ORIGINAL ENGLISH VERSION:":PRINT
330 MX$=M1$:GOSUB 620:M1$=MX$
340 POSITION 0,20
350 PRINT "PLEASE WAIT A MOMENT ...";
360 M2$="":MB$=CHR$(32)
370 FOR N=1 TO LEN(M1$)
380 M$=M1$(N,N)
390 IF N>1 THEN MB$=M1$(N-1)
400 IF  NOT (N=1 OR ASC(MB$)=32) THEN GOTO 430
410 IF M$="S" THEN M2$(LEN(M2$)+1)="E":M2$(LEN(M2$)+1)=M$:GOTO 440
420 IF M$="I" THEN M2$(LEN(M2$)+1)="EE":GOTO 440
430 M2$(LEN(M2$)+1)=M$
440 NEXT N
450 POSITION 0,20
460 PRINT "STRIKE ANY KEY TO SEE THE"
470 PRINT "SPANISH-ENGLISH VERSION ...";
480 GET #1,K
490 PRINT CHR$(125):PRINT MH$
500 PRINT S$
510 PRINT "SPANISH-ENGLISH TRANSLATION:"
520 PRINT
530 MX$=M2$:GOSUB 620
540 POSITION 0,20
550 PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
560 PRINT "TRANSLATION (OR STRIKE THE X KEY"
570 PRINT "TO END THE PROGRAM) ...";
580 GET #1,K
590 IF K=155 THEN GOTO 210
600 IF  NOT (K=88 OR K=120) THEN 580
610 POKE 82,2:GRAPHICS 0:END
620 MY$=""
630 FOR N=1 TO LEN(MX$)
640 C=ASC(MX$(N))
650 IF C>90 THEN C=C-32
660 MY$(N)=CHR$(C)
670 IF C=32 AND PEEK(85)>30 THEN PRINT :GOTO 690
680 PRINT CHR$(C);
690 NEXT N
700 MX$=MY$
710 RETURN
```

Program 14 PIG-LATIN GENERATOR

"Ifa ouya anca eadra istha, ouya area oota arnda osecla."

—Ullafa Olonyba

It is often difficult to assess the most positive elements of modernized American education. It is far easier to feel badly about what has been lost. Four generations of

Americans have not been exposed to the beauty and cultural insight that is inherent in a serious study of Pig Latin.

```
10 REM ** PIG-LATIN GENERATOR **
20 REM
30 OPEN #1,4,0,"K:":POKE 82,0
40 DIM H$(80),P$(160),CH$(1),D$(1)
50 DIM PO$(160),C1(100),M$(160),F$(100)
60 DIM MX$(120),MY$(120)
70 FOR K=1 TO 10:H$(K)=CHR$(32):NEXT K
80 H$(11)="PIG-LATIN GENERATOR":H$(30)=CHR$(155)
90 FOR K=31 TO 70:H$(K)=",":NEXT K
100 GRAPHICS 0:PRINT H$
110 PRINT "ENTER A PLAIN-ENGLISH PHRASE OR SEN-"
120 PRINT "TENCE OF LESS THAN 100 CHARACTERS."
130 PRINT "USE NO PUNCTUATION AND DO NOT STRIKE"
140 PRINT "THE RETURN KEY UNTIL YOU ARE DONE."
150 PRINT
160 INPUT P$
170 IF LEN(P$)>1 THEN GOTO 210
180 PRINT
190 PRINT "QUIT FOOLING AROUND. TRY AGAIN ..."
200 GOTO 160
210 IF LEN(P$)<220 THEN GOTO 250
220 PRINT "SORRY, TOO MANY CHARACTERS."
230 PRINT "ENTER AGAIN AS SOON AS WE'RE SET UP."
240 FOR T=1 TO 2500:NEXT T:GOTO 100
250 PRINT CHR$(125);H$
260 PRINT "HERE IS YOUR PLAIN ENGLISH ENTRY:"
270 PRINT
280 MX$=P$:GOSUB 770:P$=MX$
290 W=1
300 FOR N=1 TO LEN(P$)
310 CH$=P$(N,N)
320 IF CH$<>CHR$(32) THEN GOTO 410
330 C1(W)=N
340 W=W+1
350 IF W<100 THEN GOTO 410
360 PRINT
370 PRINT "SORRY, TOO MANY WORDS."
380 PRINT "ENTER A SHORTER VERSION AS SOON AS"
390 PRINT "WE'RE SET UP AGAIN."
400 FOR T=0 TO 2500:NEXT T:GOTO 100
410 NEXT N
420 C1(W)=N
430 POSITION 0,21
440 PRINT "PLEASE WAIT A MOMENT ...";
450 U=1:PO$=""
460 FOR N=1 TO W
470 FOR M=U TO C1(N)
480 CH$=P$(M,M)
490 F$=""
500 RESTORE
510 DATA A,E,I,O,U
520 FOR X=1 TO 5
```

```
530 READ D$
540 IF CH$<>D$ THEN GOTO 600
550 IF M=U THEN GOTO 570
560 F$=P$(U,M-1)
570 PO$(LEN(PO$)+1)=P$(M,C1(N)-1)
580 PO$(LEN(PO$)+1)=F$:PO$(LEN(PO$)+1)="A "
590 GOTO 620
600 NEXT X
610 NEXT M
620 U=C1(N)+1
630 NEXT N
640 POSITION 0,21
650 PRINT "OK, STRIKE ANY KEY TO SEE THE PIG-"
660 PRINT "LATIN VERSION ...";
670 GET #1,K
680 PRINT CHR$(125);H$
690 PRINT "PIG LATIN VERSION:":PRINT
700 MX$=PO$:GOSUB 770
710 POSITION 0,21
720 PRINT "WANT TO DO ANOTHER TRANSLATION (Y/N)?";
730 GET #1,K
740 IF K=89 OR K=121 THEN 100
750 IF  NOT (K=78 OR K=110) THEN 730
760 POKE 82,2:GRAPHICS 0:END
770 MY$=""
780 FOR N=1 TO LEN(MX$)
790 C=ASC(MX$(N))
800 IF C>90 THEN C=C-32
810 MY$(N)=CHR$(C)
820 IF C=32 AND PEEK(85)>30 THEN PRINT :GOTO 840
830 PRINT CHR$(C);
840 NEXT N
850 MX$=MY$
860 RETURN
```

Program 15 SINGING COMPUTER

"Ah, [it is] music to mine ears."

—Beethoven

```
20 REM ** SINGING COMPUTER **
30 REM
40 DIM M$(80),S$(40)
50 POKE 82,0
60 GRAPHICS 0
70 FOR N=1 TO 12:M$(N)=CHR$(32):NEXT N
80 M$(13)="SINGING COMPUTER":M$(29)=CHR$(155)
90 FOR N=1 TO 39:S$(N)=CHR$(32):NEXT N
100 FOR N=30 TO 69:M$(N)="#":NEXT N
110 PRINT CHR$(125);M$
120 POSITION 0,22
130 PRINT "STRIKE ANY KEY TO STOP THE MUSIC ...";
```

```
140 POKE 752,1
150 POSITION 0,6
160 R=INT(200*RND(1))+55
170 IF R>200 THEN PRINT "DAH.":GOSUB 280:GOTO 200
180 IF R>100 THEN PRINT "LA-";:GOTO 200
190 PRINT "DE-";
200 SOUND 0,R,10,8:GOSUB 260:SOUND 0,R,10,8
210 IF PEEK(84)>19 THEN POSITION 0,6
220 IF PEEK(764)=255 THEN GOTO 160
230 POKE 752,0:POKE 82,2:PRINT CHR$(125)
240 END
250 R=INT(200*RND(1))+55:RETURN
260 FOR I=1 TO 50:NEXT I
270 RETURN
280 CL=PEEK(85)
290 RW=PEEK(84)
300 PRINT S$;
310 POSITION CL,RW
320 RETURN
```

Program 16 MUSICAL KEYBOARD

"Play it again, Sam."

—Attributed to the film, *Casablanca*

```
10 REM ** MUSICAL KEYBOARD **
20 REM
30 DIM M$(80):POKE 82,0
40 FOR N=1 TO 12:M$(N)=CHR$(32):NEXT N
50 M$(13)="MUSICAL KEYBOARD":M$(29)=CHR$(155)
60 FOR N=30 TO 69:M$(N)="*":NEXT N
70 GRAPHICS 0:PRINT M$
80 PRINT :PRINT "TICKLE THE KEYS ..."
90 POSITION 1,21
100 PRINT "TYPE * TO DO SOMETHING ELSE ...";
110 POKE 752,1
120 K=PEEK(764)
130 IF K=255 THEN GOTO 120
140 POKE 764,255
150 IF K=7 THEN GRAPHICS 0:POKE 82,2:END
160 FOR T=15 TO 0 STEP -1
170 SOUND 0,K*5,10,T:NEXT T
180 GOTO 120
```

Program 17 CRYPTOGRAM GENERATOR

"Bvo xgzm dt bvo bvdjy"

—Tvzpotxozso

If you are a cryptogram puzzle fan, you will no longer have to spend money on puzzle books and magazines.

```
10 REM ** CRYPTOGRAM GENERATOR **
20 REM
30 OPEN #1,4,0,"K:":POKE 82,0
40 DIM C(26),P1$(30),P2$(50),P3$(50)
50 DIM PLAIN$(165),PUZZLE$(160),MX$(165),MY$(165)
60 P1$="CRYPTOGRAM":P1$(11)=CHR$(32)
70 P2$="GENERATOR"
80 FOR K=1 TO 41:P3$(K)="=":NEXT K
90 P3$(42)=CHR$(155):P3$(1,1)=CHR$(155)
100 PRINT CHR$(125):PRINT P1$;P2$;P3$
110 PRINT :PRINT "NOW GENERATING THE CODE."
120 POSITION 0,16
130 POKE 752,1
140 PRINT "PLEASE WAIT ..."
150 FOR N=1 TO 26
160 C(N)=INT(26*RND(1)+1)
170 IF N=1 THEN 220
180 FOR X=1 TO N-1
190 SOUND 0,X,10,15
200 IF C(N)=C(X) THEN 160
210 NEXT X
220 NEXT N
230 SOUND 0,0,0,0
240 POKE 752,0
250 PRINT CHR$(125);P1$;P2$;P3$
260 PRINT "ENTER THE MESSAGE TO BE ENCODED."
270 PRINT "ENCLOSE IT IN QUOTES AND USE NO MORE"
280 PRINT "THAN 160 CHARACTERS (ABOUT 4 FULL"
290 PRINT "LINES).":PRINT
300 INPUT PLAIN$
310 L=LEN(PLAIN$)
320 IF L<1 THEN GOTO 250
330 IF L<=160 THEN GOTO 370
340 PRINT
350 PRINT "TOO LONG. TRY AGAIN ..."
360 PRINT :GOTO 300
370 MX$=PLAIN$:GOSUB 600:PLAIN$=MX$
380 PRINT CHR$(125);P1$;P3$
390 PUZZLE$=""
400 FOR N=1 TO L
410 CHAR=ASC(PLAIN$(N,N))
420 IF CHAR<65 OR CHAR>90 THEN GOTO 440
430 CHAR=C(CHAR-64)+64
440 PUZZLE$(LEN(PUZZLE$)+1)=CHR$(CHAR)
450 NEXT N
460 PRINT PUZZLE$
470 POSITION 0,21
480 PRINT "STRIKE ANY KEY TO SEE THE ANSWER ...";
490 GET #1,K
500 PRINT CHR$(125);P1$;P3$
510 PRINT PUZZLE$:PRINT
520 PRINT :PRINT PLAIN$
530 POSITION 0,21
540 PRINT "DO YOU WANT TO DO ANOTHER CRYPTOGRAM"
550 PRINT "(Y/N)?";
560 GET #1,K
```

```
570 IF K=89 OR K=121 THEN 100
580 IF  NOT (K=78 OR K=110) THEN 560
590 POKE 82,2:GRAPHICS 0:END
600 MY$=""
610 FOR N=1 TO LEN(MX$)
620 C=ASC(MX$(N))
630 IF C>90 THEN C=C-32
640 MY$(N)=CHR$(C)
650 NEXT N
660 MX$=MY$
670 RETURN
```

Program 18 WORLD BANK UPDATE

1723-44458-200010

—(Paul's Swiss bank account number)

```
10 REM ** WORLD BANK UPDATE **
20 REM
30 DIM M$(80),MN$(3),HR$(3),SC$(3),C$(20),D$(5)
40 DIM XX$(40)
50 POKE 82,0
60 OPEN #1,4,0,"K:"
70 FOR K=1 TO 10:M$(LEN(M$)+1)=CHR$(32):NEXT K
80 M$(11)="MONETARY CONVERSION"
90 M$(30)=CHR$(155)
100 FOR K=1 TO 40:M$(LEN(M$)+1)="*":NEXT K
110 PRINT CHR$(125):PRINT M$
120 PRINT
130 PRINT "THE WORLD'S MONETARY PICTURE IS OFTEN"
140 PRINT "UNSTABLE AGAINST THE AMERICAN DOLLAR"
150 PRINT
160 PRINT "THIS PROGRAM HELPS YOU KEEP TRACK OF"
170 PRINT "THE SITUATION AT 30-SECOND INTERVALS."
180 POSITION 0,20
190 PRINT "STRIKE ANY KEY TO BEGIN ...";
200 GET #1,K
210 PRINT CHR$(125):PRINT M$:PRINT
220 PRINT
230 PRINT "ENTER THE CURRENT HOUR (1-12) ";
240 GOSUB 800:CH=XX
250 IF CH>=1 AND CH<=12 THEN 270
260 PRINT "TRY AGAIN ...";:GOTO 240
270 PRINT
280 PRINT "ENTER THE CURRENT MINUTE (0-59) ";
290 GOSUB 800:CM=XX
300 IF CM>=0 AND CM<=59 THEN 320
310 PRINT "TRY AGAIN ...";:GOTO 290
320 SETCOLOR 1,12,2:SETCOLOR 2,12,14
330 PRINT CHR$(125):PRINT M$
340 POKE 752,1:GOTO 530
350 PRINT CHR$(125):PRINT M$:PRINT
360 POSITION 0,6
370 FOR SS=15 TO 2 STEP -1
```

```
380 SOUND 0,80,10,SS
390 FOR TT=1 TO 10:NEXT TT
400 NEXT SS
410 SOUND 0,0,0,0
420 RESTORE 770
430 FOR N=1 TO 6
440 D$=STR$(4*RND(1)+1):D$=D$(1,4)
450 D$(5)=CHR$(32)
460 POKE 85,5
470 PRINT "1$ U.S.=";D$;:READ C$:PRINT C$
480 PRINT :NEXT N
490 POSITION 0,21
500 PRINT "STRIKE ANY KEY TO CLOSE FOR THE DAY ...";
510 POKE 764,255
520 RETURN
530 FOR HR=CH TO 12
540 FOR MN=CM TO 59
550 FOR SC=0 TO 59
560 IF SC=0 OR SC=30 THEN GOSUB 360
570 HR$(1)="0":HR$(2)=STR$(HR)
580 IF LEN(HR$)>2 THEN HR$=HR$(2)
590 MN$(1)="0":MN$(2)=STR$(MN)
600 IF LEN(MN$)>2 THEN MN$=MN$(2)
610 SC$(1)="0":SC$(2)=STR$(SC)
620 IF LEN(SC$)>2 THEN SC$=SC$(2)
630 POSITION 16,4
640 PRINT HR$;":";MN$;":";SC$;
650 FOR T=0 TO 30
660 K=PEEK(764)
670 IF K=255 THEN 710
680 POKE 82,2:POKE 172,0
690 GRAPHICS 0:END
700 IF K<>255 THEN POSITION 0,22:END
710 NEXT T
720 NEXT SC
730 NEXT MN
740 CM=0
750 NEXT HR
760 CH=1:GOTO 530
770 DATA AUSTRALIAN DOLLARS,BRAZILIAN CRUZEIROS
780 DATA CHINESE YUAN,FRENCH FRANCS
790 DATA DEUTSCHE MARKS,BRITISH POUNDS
800 INPUT XX$
810 FOR NX=1 TO LEN(XX$)
820 IF XX$(NX)>="0" AND XX$(NX)<="9" THEN 840
830 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 800
840 NEXT NX
850 XX=VAL(XX$)
860 RETURN
```

Program 19 SPOONERISMS

Customer: Give me a cup of tea and a muttered buffin.

Waitress: You mean a buffered muttin.
Customer: No, I mean a muffered buttin.
Waitress: Why not settle for tea and doughnuts?

—Overheard in truck stop near Virginia Beach

```
10 REM ** SPOONERISMS **
20 REM
30 DIM M$(80),P$(40),F$(40),G$(40)
40 DIM CH$(40),H$(40),X$(40),Y$(40)
50 DIM I$(40),L$(40),D$(40)
60 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
70 M$(15)="SPOONERISMS":M$(26)=CHR$(155)
80 FOR K=1 TO 40:M$(26+K)=CHR$(42):NEXT K
90 POKE 82,0:OPEN #1,4,0,"K:"
100 GRAPHICS 0
110 PRINT CHR$(125);M$
120 POSITION 8,4
130 PRINT "Here is a SPOONERISM:":PRINT
140 POKE 85,11:PRINT "BUTTERED TOAST"
150 POKE 85,17:PRINT "is"
160 POKE 85,11:PRINT "TUTTERED BOAST"
170 POSITION 0,20
180 PRINT "Strike any key to do some spooner-"
190 PRINT "isms of your own ...";
200 POKE 764,255:GET #1,K
210 PRINT CHR$(125);M$
220 PRINT "Enter a 2-word phrase":PRINT
230 INPUT P$
240 IF LEN(P$)>1 THEN 260
250 PRINT :GOTO 220
260 X$=P$:GOSUB 550
270 G$=X$(LEN(Y$)+1)
280 F$=Y$
290 LP=LEN(G$)
300 FOR N=1 TO LP
310 CH$=G$(N,N)
320 IF ASC(CH$)=32 THEN 360
330 NEXT N
340 PRINT
350 PRINT "Not enough words. Try again ...":GOTO 220
360 H$=G$(N+1)
370 G$=G$(1,N)
380 X$=H$:GOSUB 550
390 I$=X$(LEN(Y$)+1)
400 L$=Y$
410 PRINT CHR$(125);M$
420 PRINT
430 X=INT((39-LEN(P$))/2)
440 POKE 85,X:PRINT P$
450 POKE 85,17:PRINT "is"
460 POKE 85,X
470 PRINT L$;G$;F$;I$
480 POSITION 0,20
490 PRINT "Want to try another one (Y/N)? ";
500 POKE 764,255:GET #1,K
```

```
510 IF K=89 OR K=121 THEN 210
520 IF  NOT (K=78 OR K=110) THEN 500
530 POKE 82,2:GRAPHICS 0:END
540 DATA A,E,I,O,U
550 LP=LEN(X$)
560 Y$=""
570 FOR N=1 TO LP
580 CH$=X$(N,N)
590 CX=ASC(X$(N))
600 IF CX<=90 THEN 620
610 CX=CX-32:X$(N,N)=CHR$(CX):GOTO 580
620 RESTORE
630 FOR X=1 TO 5:READ D$
640 IF D$=CH$ THEN RETURN
650 NEXT X
660 Y$(LEN(Y$)+1)=CH$
670 NEXT N
680 RETURN
```

Program 20 TYPING HELPER

"The man who makes no mistakes does not usually make anything."
—Bishop W.C. Magee

If you experience any difficulty with the use of this program, you might do well to consult the Cussing Program.

```
10 REM ** TYPING HELPER **
20 REM
30 DIM M$(80),S$(10),E$(10)
40 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
50 M$(15)="TYPING HELPER"
60 M$(LEN(M$)+1)=CHR$(155)
70 FOR K=1 TO 40
80 M$(LEN(M$)+1)=CHR$(35)
90 S$="ERRORS:"
100 NEXT K
110 OPEN #1,4,0,"K:"
120 POKE 82,0
130 GRAPHICS 0
140 SETCOLOR 1,0,2:SETCOLOR 2,0,14
150 PRINT CHR$(155);M$
160 FOR N=1 TO 50
170 SOUND 0,50*RND(1)+5,10,10
180 NEXT N
190 SOUND 0,0,0,0
200 E=0
210 PRINT "Type a sentence of your choice. Do NOT"
220 PRINT "strike the RETURN key until you are"
230 PRINT "done."
240 PRINT M$(29)
250 POSITION 0,9
260 GET #1,K
```

```
270 IF 6*RND(1)>1 THEN 440
280 K=INT(32*RND(1)+50)
290 E=E+1
300 CH=PEEK(85):CV=PEEK(84)
310 POSITION 10,20
320 FOR N=1 TO 4
330 SOUND 0,10*RND(1)+10,10,10
340 NEXT N
350 SOUND 0,0,0,0
360 FOR N=1 TO LEN(S$)
370 PRINT CHR$(ASC(S$(N))+128);
380 NEXT N
390 E$=STR$(E)
400 FOR N=1 TO LEN(E$)
410 PRINT CHR$(ASC(E$(N))+128);
420 NEXT N
430 POSITION CH,CV
440 PRINT CHR$(K);
450 IF K=155 OR PEEK(84)>11 THEN 470
460 GOTO 260
470 POSITION 0,20
480 PRINT "Want to try doing better (Y/N)? ";
490 GET #1,K
500 IF K=89 OR K=121 THEN 130
510 IF  NOT (K=78 OR K=110) THEN 490
520 POKE 82,2
530 GRAPHICS 0:END
```

Program 21 LETTER SCRAMBLER

Q: What four-letter word, when printed in capitals, reads the same forward, backward and upside down?

A: NOON

```
10 REM ** LETTER SCRAMBLER **
20 REM
30 OPEN #1,4,0,"K:":POKE 82,0
40 DIM M$(80),Y$(40),CH$(17),C(17)
50 DIM FW$(20),SW$(20)
60 FOR N=1 TO 12:M$(N)=CHR$(32):NEXT N
70 M$(13)="LETTER SCRAMBER"
80 M$(28)=CHR$(155)
90 FOR N=1 TO 40:Y$(N)="*":NEXT N
100 M$(29)=Y$
110 GRAPHICS 0
120 SETCOLOR 1,7,2:SETCOLOR 2,7,14
130 PRINT M$
140 PRINT "THIS PROGRAM ALLOWS YOU TO ENTER A WORD"
150 PRINT "OR PHRASE OF 16 CHARACTERS OR LESS. IT"
160 PRINT "THEN SCRAMBLES THE CHARACTERS"
170 POSITION 0,20
180 PRINT "STRIKE ANY KEY TO BEGIN ...";
```

```
190 GET #1,K
200 PRINT CHR$(125);M$
210 PRINT "ENTER A WORD OR PHRASE OF 16 CHARACTERS"
220 PRINT "OR LESS."
230 PRINT :INPUT FW$
240 L=LEN(FW$)
250 IF L>0 THEN GOTO 280
260 PRINT "PLEASE ENTER SOMETHING."
270 GOTO 230
280 IF L<17 THEN GOTO 300
290 PRINT :PRINT "TOO MANY CHARACTERS. TRY AGAIN.":GOTO 230
300 POSITION 0,20
310 POKE 752,1
320 PRINT "PLEASE WAIT ...";
330 FOR N=1 TO L
340 CH$(N)=FW$(N,N)
350 C(N)=INT(L*RND(1))+1
360 IF N=1 THEN GOTO 400
370 FOR X=1 TO N-1
380 IF C(N)=C(X) THEN GOTO 350
390 NEXT X
400 NEXT N
410 SW$=""
420 FOR N=1 TO L
430 SW$(LEN(SW$)+1)=CH$(C(N),C(N))
440 NEXT N
450 POKE 752,0
460 PRINT CHR$(125);M$
470 PRINT "ORIGINAL VERSION:"
480 PRINT :PRINT CHR$(127);FW$
490 PRINT :PRINT "SCRAMBLED VERSION:"
500 PRINT :PRINT CHR$(127);SW$
510 PRINT :PRINT Y$
520 POSITION 0,18
530 PRINT "SELECT ONE:":PRINT
540 POKE 85,5
550 PRINT "1 - SCRAMBLE THE SAME WORD AGAIN."
560 POKE 85,5
570 PRINT "2 - SCRAMBLE A NEW WORD."
580 POKE 85,5
590 PRINT "3 - END THE PROGRAM."
600 GET #1,K
610 IF K<ASC("1") OR K>ASC("3") THEN GOTO 600
620 PRINT CHR$(125)
630 ON K-48 GOTO 300,200
640 POKE 82,2:GRAPHICS 0
650 END
```

Program 22 LETTER-SCRAMBLE GAME

"Dmoph glubble muff pssht wumph!"

—Demosthenes

```
10 REM ** LETTER-SCRAMBLE GAME **
```

```
20 REM
30 OPEN #1,4,0,"K:":POKE 82,0
40 DIM M$(80),N1$(20),N2$(20),GW$(30)
50 DIM EP$(30),GP$(30),SW$(30),FW$(30)
60 DIM CH$(30),C(30),XX$(20)
70 FOR K=1 TO 10:M$(K)=CHR$(32):NEXT K
80 M$(11)="LETTER-SCRAMBLE GAME"
90 M$(31)=CHR$(155)
100 FOR K=32 TO 71:M$(K)="-":NEXT K
110 GRAPHICS 0
120 SETCOLOR 1,1,2:SETCOLOR 2,1,14
130 PRINT CHR$(125)
140 PRINT "PLAYERS.":PRINT
150 PRINT "PLAYER 1, ENTER YOUR FIRST NAME:"
160 INPUT N1$
170 IF LEN(N1$)<1 THEN GOTO 160
180 IF LEN(N1$)<=12 THEN 200
190 PRINT "AWW, GET SERIOUS. TRY AGAIN ...":GOTO 150
200 PRINT "PLAYER 2, ENTER YOUR FIRST NAME:"
210 INPUT N2$:IF LEN(N2$)<1 THEN GOTO 210
220 IF LEN(N2$)<=12 THEN 240
230 PRINT "AWW, GET SERIOUS. TRY AGAIN ...":GOTO 200
240 PH=1
250 PRINT CHR$(125);M$
260 EP$=N1$:GP$=N2$
270 IF PH=-1 THEN EP$=N2$:GP$=N1$
280 PRINT EP$;", MAKE YOUR ENTRY:"
290 PRINT
300 PRINT "ENTER A WORD OR SHORT PHRASE UP TO 16"
310 PRINT "CHARACTERS LONG."
320 PRINT
330 PRINT "MAKE SURE THAT YOUR OPPONENT ISN'T"
340 PRINT "LOOKING OVER YOUR SHOULDER."
350 PRINT
360 INPUT FW$
370 L=LEN(FW$)
380 IF L>=1 THEN 410
390 PRINT "YOU MUST ENTER SOMETHING ..."
400 GOTO 340
410 IF L<=20 THEN 440
420 PRINT "TOO MANY CHARACTERS. TRY AGAIN ..."
430 GOTO 360
440 XX$=""
450 FOR N=1 TO L
460 CH=ASC(FW$(N))
470 IF CH>90 THEN CH=CH-32
480 XX$(N)=CHR$(CH)
490 NEXT N
500 FW$=XX$
510 PRINT CHR$(125);M$
520 POSITION 0,8:PRINT "PLEASE WAIT ...";
530 SW$=""
540 FOR N=1 TO L
550 CH$(N)=FW$(N,N)
560 C(N)=INT(L*RND(1))+1
570 IF N=1 THEN NEXT N
```

```
580 FOR X=1 TO N-1
590 IF C(N)=C(X) THEN GOTO 560
600 NEXT X
610 NEXT N
620 FOR N=1 TO L
630 SW$(LEN(SW$)+1)=CH$(C(N),C(N))
640 NEXT N
650 PRINT CHR$(125);M$
660 PRINT "OK,";GP$;":":PRINT
670 PRINT "SEE IF YOU CAN GUESS THIS WORD:"
680 POSITION (40-L)/2,8
690 PRINT SW$
700 PRINT :PRINT "ENTER YOUR GUESS WHEN YOU THINK YOU'VE"
710 PRINT "FIGURED IT OUT ..."
720 PRINT :INPUT GW$
730 IF LEN(GW$)>1 THEN GOTO 760
740 PRINT "YOU MUST ENTER SOMETING, TRY AGAIN ..."
750 GOTO 720
760 XX$=""
770 FOR NC=1 TO LEN(GW$)
780 CH=ASC(GW$(NC))
790 IF CH>90 THEN CH=CH-32
800 XX$(NC)=CHR$(CH)
810 NEXT NC
820 GW$=XX$
830 PRINT CHR$(125);M$
840 PRINT :PRINT EP$;"'S WORD WAS:"
850 PRINT :PRINT CHR$(126);FW$
860 PRINT :PRINT GP$;"'S GUESS IS:"
870 PRINT :PRINT CHR$(126);GW$
880 PRINT
890 IF GW$=FW$ THEN GOTO 1030
900 PRINT :PRINT "SORRY ABOUT THAT, ";GP$;"."
910 FOR SS=1 TO 100
920 SOUND 0,SS,10,10
930 NEXT SS
940 SOUND 0,0,0,0
950 PRINT EP$;" OUTSMARTED YOU."
960 PRINT :PRINT "YOU HAVE TO GUESS AGAIN."
970 GOSUB 1170
980 GET #1,K
990 IF K=32 THEN 250
1000 IF  NOT (K=88 OR K=120) THEN 980
1010 POKE 82,2:GRAPHICS 0
1020 END
1030 PRINT :PRINT "THAT'S GOOD, ";GP$
1040 FOR N=1 TO 4:FOR SS=40 TO 10 STEP -2
1050 SOUND 0,SS,10,10
1060 NEXT SS
1070 NEXT N
1080 SOUND 0,0,0,0
1090 PRINT :PRINT "NOW IT IS YOUR TURN TO SEE IF YOU CAN"
1100 PRINT "OUTSMART ";EP$;"."
1110 GOSUB 1170
1120 GET #1,K
1130 IF K=32 THEN PH=PH*(-1):GOTO 250
```

```
1140 IF  NOT (K=88 OR K=120) THEN 1120
1150 PRINT CHR$(125):POKE 85,2
1160 GRAPHICS 0:END
1170 POSITION 0,21:PRINT "STRIKE THE SPACE BAR TO CONTINUE"
1180 PRINT "(OR THE X KEY TO END THE GAME ...";
1190 RETURN
```

Program 23 WORD-SCRAMBLE GAME

"No I don't. I don't no. Don't I no."

—I.M. Reatching

```
10 REM ** WORD-SCRAMBLE GAME **
20 REM
30 DIM M$(80),CL$(40),X$(40),N$(40)
40 DIM N(2,2),W$(250),FW$(250),W(50,2)
50 DIM EP$(15),GP$(15),C(50),H$(250)
60 DIM WG$(250),SW$(250)
70 FOR K=1 TO 11:M$(K)=CHR$(32):NEXT K
80 M$(12)="WORD-SCRAMBLE GAME":M$(30)=CHR$(155)
90 FOR K=1 TO 40
100 M$(30+K)=CHR$(45):CL$(K)=CHR$(32)
110 NEXT K
120 POKE 82,0:OPEN #1,4,0,"K:"
130 GRAPHICS 0
140 SETCOLOR 1,8,2:SETCOLOR 2,8,14
150 SETCOLOR 4,4,2
160 PRINT CHR$(125);M$
170 PRINT "This is a word-scrambling guessing game"
180 PRINT "for two players.":PRINT
190 FOR N=1 TO 2
200 POSITION 2,5*(N+1)
210 PRINT "Player ";N;", enter your first name:"
220 PRINT :POKE 85,5
230 CH=PEEK(85):CV=PEEK(84)
240 POSITION CH,CV:PRINT CL$(1,39-CH)
250 POSITION CH,CV
260 INPUT X$
270 LX=LEN(X$):IF LX<1 THEN 250
280 IF LX<12 THEN 310
290 PRINT "Aww, get serious. Try again ...";
300 GOTO 240
310 CX=ASC(X$):IF CX<=90 THEN 330
320 X$(1,1)=CHR$(CX-32)
330 N(N,1)=LEN(N$)+1:N(N,2)=N(N,1)+LX-1
340 N$(LEN(N$)+1)=X$
350 NEXT N
360 PH=1
370 PRINT CHR$(125);M$
380 W$="":FW$="":SW$=""
390 EP$=N$(N(1,1),N(1,2))
400 GP$=N$(N(2,1),N(2,2))
410 IF PH<>-1 THEN 440
```

```
420 EP$=N$(N(2,1),N(2,2))
430 GP$=N$(N(1,1),N(1,2))
440 PRINT EP$;CHR$(58):PRINT
450 PRINT "Enter a phrase or sentence of 50 words"
460 PRINT "or less. Use no punctuation, do not"
470 PRINT "strike the RETURN key until you are"
480 PRINT "done, and make sure that your opponent"
490 PRINT "isn't looking over your shoulder."
500 PRINT
510 INPUT FW$
520 L=LEN(FW$)
530 IF L<1 THEN 510
540 C=1:W=1:DF=0
550 FOR N=1 TO LEN(FW$)
560 CH=ASC(FW$(N))
570 IF CH=32 OR DF=1 THEN 590
580 X$(C,C)=CHR$(CH):C=C+1:GOTO 710
590 LX=LEN(X$)-1
600 C=1
610 W(W,1)=LEN(W$)+1:W(W,2)=W(W,1)+LX
620 W$(LEN(W$)+1)=X$
630 X$=""
640 W=W+1
650 IF DF=1 THEN W=W-1:GOTO 730
660 IF W<50 THEN 710
670 PRINT "Sorry, too many words."
680 PRINT "Strike the RETURN key to enter a"
690 PRINT "shorter version ...";
700 POKE 764,255:GET #1,K:GOTO 370
710 NEXT N
720 DF=1:GOTO 570
730 POSITION 0,20
740 PRINT "Are you satisfied (Y/N)?";
750 POKE 764,255:GET #1,K
760 IF K=89 OR K=121 THEN 790
770 IF  NOT (K=78 OR K=110) THEN 750
780 GOTO 370
790 PRINT CHR$(125);M$
800 POKE 752,1:POSITION 0,16
810 PRINT "PLEASE WAIT ..."
820 FOR N=1 TO W
830 C(N)=INT(W*RND(1)+1)
840 IF N=1 THEN 880
850 FOR X=1 TO N-1
860 IF C(N)=C(X) THEN 830
870 NEXT X
880 NEXT N
890 SW$=""
900 FOR N=1 TO W
910 SW$(LEN(SW$)+1)=W$(W(C(N),1),W(C(N),2))
920 SW$(LEN(SW$)+1)=CHR$(32)
930 NEXT N
940 SW$=SW$(1,LEN(SW$)-1)
950 PRINT CHR$(125);M$
```

```
960 PRINT "OK,";CHR$(32);GP$;CHR$(58):PRINT
970 PRINT "See if you can unscramble this phrase:"
980 PRINT
990 H$=SW$:GOSUB 1390:SW$=H$
1000 POKE 752,0
1010 PRINT :PRINT
1020 PRINT "Enter your interpretation:":PRINT
1030 INPUT WG$
1040 IF LEN(WG$)<1 THEN 1030
1050 PRINT CHR$(125);M$
1060 PRINT :PRINT EP$;"'s phrase was:"
1070 PRINT :H$=FW$:GOSUB 1390:FW$=H$
1080 PRINT :PRINT GP$;"'s guess is:"
1090 PRINT :H$=WG$:GOSUB 1390:WG$=H$
1100 PRINT
1110 GOSUB 1350
1120 POKE 764,255:GET #1,K
1130 IF K=32 THEN 1160
1140 IF  NOT (K=88 OR K=120) THEN 1120
1150 GOTO 1330
1160 PRINT CHR$(125);M$
1170 IF WG$=FW$ THEN 1260
1180 PRINT :PRINT "Sorry about that, ";GP$;CHR$(46)
1190 PRINT EP$;" outsmarted you."
1200 PRINT :PRINT "You have to guess again."
1210 GOSUB 1350
1220 POKE 764,255:GET #1,K
1230 IF K=32 THEN 370
1240 IF  NOT (K=88 OR K=120) THEN 1220
1250 GOTO 1330
1260 PRINT :PRINT "That's good ";GP$;CHR$(46)
1270 PRINT :PRINT "Now it's your turn to see if you can"
1280 PRINT "outsmart ";EP$;CHR$(46)
1290 GOSUB 1350
1300 POKE 764,255:GET #1,K
1310 IF K=32 THEN PH=PH*(-1):GOTO 370
1320 IF  NOT (K=88 OR K=120) THEN 1300
1330 POKE 82,2:PRINT CHR$(125)
1340 GRAPHICS 0:END
1350 POSITION 0,20:POKE 752,0
1360 PRINT "Strike the SPACE BAR to continue"
1370 PRINT "(or the X key to end the game) ...";
1380 RETURN
1390 FOR N=1 TO LEN(H$)
1400 CH=ASC(H$(N,N))
1410 IF CH<=90 THEN 1430
1420 CH=CH-32
1430 H$(N,N)=CHR$(CH)
1440 PRINT CHR$(CH+128);
1450 IF PEEK(85)>32 AND CH=32 THEN PRINT
1460 NEXT N
1470 PRINT
1480 RETURN
```

Program 24 BREAK TIME

"A break in time is worth nine."

—Anonymous

```
10 REM ** BREAK TIME **
20 REM
30 DIM M$(80)
40 OPEN #1,4,0,"K:":POKE 82,0
50 FOR K=1 TO 15:M$(K)=CHR$(32):NEXT K
60 M$(16)="BREAK TIME":M$(26)=CHR$(155)
70 FOR K=27 TO 66:M$(K)="#":NEXT K
80 GRAPHICS 0:PRINT M$
90 PRINT "Computers need a break now and then,"
100 PRINT "too. This program enhances that feature"
110 PRINT "by giving your computer a short rest --"
120 PRINT "IT MIGHT EVEN FALL ASLEEP."
130 POSITION 0,21
140 PRINT "STRIKE ANY KEY TO BEGIN ...";
150 GET #1,K
160 PRINT CHR$(125);M$
170 POKE 752,1
180 POSITION 1,4
190 FOR N=1 TO 10*RND(1)+10
200 PRINT "I'M WORKING - ";
210 FOR T=1 TO 100:SOUND 0,T,10,8
220 NEXT T:SOUND 0,0,0,0
230 IF PEEK(84)<20 THEN GOTO 250
240 PRINT CHR$(125);M$:POSITION 1,4
250 NEXT N
260 PRINT
270 FOR N=1 TO 10
280 SS=25
290 IF N/2=INT(N/2) THEN SS=50
300 SOUND 0,SS,10,10
310 FOR T=1 TO 50:NEXT T
320 NEXT N
330 SOUND 0,0,0,0
340 RW=PEEK(84):POKE 752,1
350 FOR T=1 TO 50
360 POSITION 15,RW
370 IF INT(T/5)/2=INT(INT(T/5)/2) THEN 390
380 PRINT M$(1,15);:GOTO 400
390 PRINT "NAP ATTACK!!";
400 NEXT T
410 PRINT
420 FOR N=1 TO 10*RND(1)+10
430 IF PEEK(84)>20 THEN POSITION 1,4
440 PRINT "Z-Z-Z-";
450 FOR T=1 TO 60:SOUND 0,50,2,6:NEXT T
460 FOR T=1 TO 30:SOUND 0,T,8,4:NEXT T
470 SOUND 0,50,2,6
480 SOUND 0,0,0,0
490 FOR T=1 TO 100:NEXT T
500 SOUND 0,0,0,0
510 NEXT N
```

```
520 FOR N=1 TO 10
530 SS=25
540 IF N/2=INT(N/2) THEN SS=50
550 SOUND 0,SS,10,10
560 FOR T=1 TO 50:NEXT T
570 NEXT N
580 SOUND 0,0,0,0
590 PRINT CHR$(125);M$
600 PRINT :PRINT
610 PRINT "OK, I'm awake and ready to go to work."
620 POKE 82,2:POKE 752,0
630 POSITION 2,20:END
```

Program 25 ESP

"Dee-dah-dee-ding/ dee-dah-dee-ding . . ."

—Theme tune of TV's *Twilight Zone*

```
10 REM ** ESP **
20 REM
30 DIM M$(80)
40 OPEN #1,4,0,"K:":POKE 82,0
50 FOR K=1 TO 18:M$(K)=CHR$(32):NEXT K
60 M$(19)="ESP":M$(22)=CHR$(155)
70 FOR K=23 TO 62:M$(K)="*":NEXT K
80 PRINT CHR$(125):PRINT :PRINT M$
90 PRINT "This program demonstrates the fact that"
100 PRINT "computers do, indeed, possess a form of"
110 PRINT "EXTRA-SENSORY PERCEPTION (ESP)."
120 PRINT
130 PRINT "The demonstration works best if you use"
140 PRINT "an electronic calculator, but the com-"
150 PRINT "puter can read your brain waves when-"
160 PRINT "ever the weather is just right. (See"
170 PRINT "the weather forecasting program.)"
180 POSITION 0,21
190 PRINT "STRIKE ANY KEY TO BEGIN ...";
200 GET #1,K
210 PRINT CHR$(125):PRINT M$:PRINT
220 PRINT "THINK OF ANY NUMBER BETWEEN 1 AND 100."
230 GOSUB 550
240 M=INT(10*RND(1)+1)
250 PRINT "MULTIPLY YOUR NUMBER BY ";M;"."
260 PRINT "BUT DON'T TELL YOUR COMPUTER ANYTHING!!"
270 GOSUB 550
280 A=INT(5*RND(1))*M
290 PRINT "NOW ADD ";A;" TO THE PREVIOUS RESULT."
300 PRINT "BUT DON'T EVEN WHISPER THE RESULT."
310 PRINT
320 PRINT "HINT: THINK CONFUSING THOUGHTS."
330 GOSUB 550
340 L=A/M
350 PRINT "DIVIDE THE LAST RESULT BY ";M;"."
```

```
360 PRINT
370 PRINT "AGAIN, DON'T TELL THE COMPUTER ANYTHING!"
380 GOSUB 550
390 PRINT "FINALLY, SUBTRACT YOUR ORIGNAL NUM-"
400 PRINT "BER FROM THE LAST RESULT."
410 PRINT
420 PRINT "THINK CONFUSING THOUGHTS."
430 GOSUB 550
440 PRINT :PRINT "THE ANSWER IS: ";
450 FOR N=1 TO 4:PRINT CHR$(253);:NEXT N
460 PRINT L
470 POSITION 0,21
480 PRINT "DO YOU WANT TO CONTINUE WITH THIS"
490 PRINT "FOOLISHNESS (Y/N)?";
500 GET #1,K
510 IF K=89 OR K=121 THEN 210
520 IF  NOT (K=78 OR K=110) THEN 500
530 GOSUB 590:PRINT CHR$(125)
540 POKE 82,2:GRAPHICS 0:END
550 POSITION 0,21:PRINT "STRIKE ANY KEY TO CONTINUE ...";
560 GET #1,K
570 GOSUB 590:PRINT CHR$(125);M$
580 RETURN
590 GOSUB 610
600 RETURN
610 FOR N=0 TO 15
620 GRAPHICS 17
630 SETCOLOR 4,15*RND(1),8
640 FOR T=1 TO 9:NEXT T
650 GRAPHICS 18
660 SOUND 0,50*RND(1)+5,8,N
670 SOUND 1,50*RND(1),10,10
680 NEXT N
690 SOUND 0,0,0,0:SOUND 1,0,0,0
700 GRAPHICS 0:RETURN
```

Program 26 WORD UNSCRAMBLER

"What really counts is what you learn after you know it all."

—Uncertain

Are you tired of being defeated by word-scramble puzzles? This program might not give you the exact solutions, but it sure provides some great hints.

```
10 REM ** WORD UNSCRAMBLER **
20 REM
30 OPEN #1,4,0,"K:":POKE 82,0
40 DIM Y$(40),SW$(17),C(17)
50 FOR N=1 TO 40:Y$(N)="-":NEXT N
60 GRAPHICS 0
70 SETCOLOR 1,8,14:SETCOLOR 2,8,2
80 SETCOLOR 4,4,2
```

```
90 PRINT "WORD UNSCRAMBLER"
100 PRINT Y$
110 PRINT "ENTER A WORD THAT IS TO BE UNSCRAMBLED"
120 PRINT "(NO MORE THAN 16 LETTERS):"
130 PRINT :INPUT SW$
140 L=LEN(SW$)
150 IF L<1 THEN GOTO 130
160 IF L<=16 THEN GOTO 180
170 PRINT "THE WORD IS TOO LONG. TRY AGAIN ...":GOTO 130
180 K=1
190 FOR N=1 TO L
200 K=K*N
210 NEXT N
220 POKE 752,1
230 PRINT CHR$(125)
240 PRINT SW$
250 PRINT
260 PRINT "UP TO ";K;" COMBINATIONS"
270 PRINT Y$
280 FOR XL=1 TO 13
290 POKE 85,INT((40-L)/2)
300 FOR N=1 TO L
310 C(N)=INT(L*RND(1))+1
320 IF N=1 THEN GOTO 360
330 FOR X=1 TO N-1
340 IF C(N)=C(X) THEN 310
350 NEXT X
360 PRINT SW$(C(N),C(N));
370 NEXT N
380 PRINT
390 NEXT XL
400 FOR SS=50 TO 10 STEP -1
410 SOUND 0,SS,10,10
420 NEXT SS
430 SOUND 0,0,0,0
440 POKE 752,0
450 POSITION 0,21
460 PRINT "STRIKE THE SPACE BAR TO SEE MORE"
470 PRINT "(OR THE X KEY TO END)...";
480 GET #1,K
490 IF K=32 THEN POKE 752,1:GOTO 230
500 IF  NOT (K=88 OR K=120) THEN 480
510 POKE 82,2:GRAPHICS 0
520 END
```

Program 27 MISSING LETTERS

"Watson, there is perhaps more than one letter missing."

—Sherlock Holmes

```
10 REM ** MISSING LETTERS **
20 REM
30 DIM M$(80),N$(40),FW$(40),SW$(40)
40 DIM N(2,2),CL$(40),X$(40),WG$(40)
```

```
50 DIM EP$(15),GP$(15),C(50),H$(40)
60 FOR K=1 TO 12:M$(K)=CHR$(32):NEXT K
70 M$(13)="MISSING LETTERS":M$(31)=CHR$(155)
80 FOR K=1 TO 40
90 M$(31+K)=CHR$(45):CL$(K)=CHR$(32)
100 NEXT K
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0
130 SETCOLOR 1,8,2:SETCOLOR 2,8,14
140 SETCOLOR 4,4,2
150 PRINT CHR$(125);M$
160 PRINT "This is a word game for two players."
170 PRINT
180 FOR N=1 TO 2
190 POSITION 2,5*(N+1)
200 PRINT "Player ";N;", enter your first name:"
210 PRINT :POKE 85,5
220 CH=PEEK(85):CV=PEEK(84)
230 POSITION CH,CV:PRINT CL$(1,39-CH)
240 POSITION CH,CV
250 INPUT X$
260 LX=LEN(X$):IF LX<1 THEN 240
270 IF LX<12 THEN 300
280 PRINT "Aww, get serious. Try again ...";
290 GOTO 230
300 CX=ASC(X$):IF CX<=90 THEN 320
310 X$(1,1)=CHR$(CX-32)
320 N(N,1)=LEN(N$)+1:N(N,2)=N(N,1)+LX-1
330 N$(LEN(N$)+1)=X$
340 NEXT N
350 PH=1
360 PRINT CHR$(125);M$
370 FW$="":SW$=""
380 EP$=N$(N(1,1),N(1,2))
390 GP$=N$(N(2,1),N(2,2))
400 IF PH<>-1 THEN 430
410 EP$=N$(N(2,1),N(2,2))
420 GP$=N$(N(1,1),N(1,2))
430 PRINT EP$;CHR$(58):PRINT
440 PRINT "Enter a phrase or sentence up to 30"
450 PRINT "characters long.":PRINT
460 PRINT "Avoid punctuation, and make sure that"
470 PRINT "your opponent isn't looking over your"
480 PRINT "shoulder."
490 PRINT
500 INPUT FW$
510 L=LEN(FW$)
520 IF L>1 THEN 540
530 PRINT "You must enter something ...":GOTO 500
540 IF L<=30 THEN 570
550 PRINT "Too many characters. Try again . ."
560 GOTO 500
570 FOR N=1 TO L
580 CH=ASC(FW$(N))
590 IF CH=32 THEN CH=42:GOTO 630
600 IF INT(N/2)=N/2 THEN CH=95:GOTO 630
```

```
610 IF CH>90 THEN CH=CH-32
620 IF CH=32 THEN CH=42
630 SW$(N,N)=CHR$(CH)
640 NEXT N
650 PRINT CHR$(125);M$
660 PRINT "OK,";CHR$(32);GP$;CHR$(58):PRINT
670 PRINT "The following message shows the letters"
680 PRINT "in their correct positions. The blanks"
690 PRINT "indicate missing letters, and the"
700 PRINT "asteisk(s) indicate spaces between"
710 PRINT "words."
720 PRINT :POKE 85,(39-L)/2
730 H$=SW$:GOSUB 1160:SW$=H$
740 POKE 752,0
750 PRINT :PRINT
760 PRINT "Enter your interpretation:":PRINT
770 INPUT WG$
780 IF LEN(WG$)<1 THEN 770
790 PRINT CHR$(125);M$
800 PRINT :PRINT EP$;"'s phrase was:"
810 POKE 85,INT(39-L)/2
820 H$=FW$:GOSUB 1160:FW$=H$
830 PRINT
840 PRINT GP$;"'s guess is:"
850 POKE 85,INT(39-L)/2
860 H$=WG$:GOSUB 1160:WG$=H$
870 PRINT
880 GOSUB 1120
890 POKE 764,255:GET #1,K
900 IF K=32 THEN 930
910 IF  NOT (K=88 OR K=120) THEN 890
920 GOTO 1100
930 PRINT CHR$(125);M$
940 IF WG$=FW$ THEN 1030
950 PRINT :PRINT "Sorry about that, ";GP$;CHR$(46)
960 PRINT EP$;" outsmarted you."
970 PRINT :PRINT "You have to guess again."
980 GOSUB 1120
990 POKE 764,255:GET #1,K
1000 IF K=32 THEN 360
1010 IF  NOT (K=88 OR K=120) THEN 990
1020 GOTO 1100
1030 PRINT :PRINT "That's good ";GP$;CHR$(46)
1040 PRINT :PRINT "Now it's your turn to see if you can"
1050 PRINT "outsmart ";EP$;CHR$(46)
1060 GOSUB 1120
1070 POKE 764,255:GET #1,K
1080 IF K=32 THEN PH=PH*(-1):GOTO 360
1090 IF  NOT (K=88 OR K=120) THEN 1070
1100 POKE 82,2:PRINT CHR$(125)
1110 GRAPHICS 0:END
1120 POSITION 0,20:POKE 752,0
1130 PRINT "Strike the SPACE BAR to continue"
1140 PRINT "(or the X key to end the game) ...";
1150 RETURN
1160 FOR N=1 TO LEN(H$)
```

```
1170 CH=ASC(H$(N,N))
1180 IF CH<=95 THEN 1200
1190 CH=CH-32
1200 H$(N,N)=CHR$(CH)
1210 PRINT CHR$(CH+128);
1220 IF PEEK(85)>32 AND CH=32 THEN PRINT
1230 NEXT N
1240 PRINT
1250 RETURN
```

Program 28 FLASHING-LETTERS GAME

"Methinks there's another puskle comink"

—Popeye

```
10 REM ** FLASHING-LETTERS GAME **
20 REM
30 DIM M$(80),N$(40),FW$(40)
40 DIM N(2,2),CL$(40),X$(40),WG$(40)
50 DIM EP$(15),GP$(15),H$(40)
60 FOR K=1 TO 9:M$(K)=CHR$(32):NEXT K
70 M$(10)="FLASHING-LETTERS GAME"
80 M$(31)=CHR$(155)
90 FOR K=1 TO 40
100 M$(31+K)=CHR$(45):CL$(K)=CHR$(32)
110 NEXT K
120 POKE 82,0:OPEN #1,4,0,"K:"
130 GRAPHICS 0
140 SETCOLOR 1,13,14:SETCOLOR 2,13,2
150 SETCOLOR 4,3,2
160 PRINT CHR$(125);M$
170 PRINT "This is a word game for two players."
180 PRINT
190 FOR N=1 TO 2
200 POSITION 2,5*(N+1)
210 PRINT "Player ";N;", enter your first name:"
220 PRINT :POKE 85,5
230 CH=PEEK(85):CV=PEEK(84)
240 POSITION CH,CV:PRINT CL$(1,39-CH)
250 POSITION CH,CV
260 INPUT X$
270 LX=LEN(X$):IF LX<1 THEN 250
280 IF LX<12 THEN 310
290 PRINT "Aww, get serious. Try again ...";
300 GOTO 240
310 CX=ASC(X$):IF CX<=90 THEN 330
320 X$(1,1)=CHR$(CX-32)
330 N(N,1)=LEN(N$)+1:N(N,2)=N(N,1)+LX-1
340 N$(LEN(N$)+1)=X$
350 NEXT N
360 PH=1
370 PRINT CHR$(125);M$
380 FW$=""
390 EP$=N$(N(1,1),N(1,2))
```

```
400 GP$=N$(N(2,1),N(2,2))
410 IF PH<>-1 THEN 440
420 EP$=N$(N(2,1),N(2,2))
430 GP$=N$(N(1,1),N(1,2))
440 PRINT EP$;CHR$(58):PRINT
450 PRINT "Enter a word or phrase up to 30"
460 PRINT "characters long.":PRINT
470 PRINT "Avoid punctuation, and make sure that"
480 PRINT "your opponent isn't looking over your"
490 PRINT "shoulder."
500 PRINT
510 INPUT FW$
520 L=LEN(FW$)
530 IF L>1 THEN 550
540 PRINT "You must enter something ...":GOTO 510
550 IF L<=30 THEN 580
560 PRINT "Too many characters. Try again ..."
570 GOTO 510
580 FOR N=1 TO L
590 CH=ASC(FW$(N))
600 IF CH>90 THEN CH=CH-32
610 FW$(N,N)=CHR$(CH)
620 NEXT N
630 PRINT CHR$(125);M$
640 PRINT "OK,";CHR$(32);GP$;CHR$(58):PRINT
650 PRINT "See if you can guess this word:"
660 POSITION 0,20
670 PRINT "Strike any key when you think you've"
680 PRINT "figured it out ..."
690 CH=INT((39-L)/2)
700 POSITION 12,11:POKE 752,1
710 PRINT "FLASHING CLUES"
720 POKE 85,CH
730 FOR K=1 TO L:PRINT CHR$(61);:NEXT K
740 POKE 764,255
750 POSITION 0,13
760 N=INT(L*RND(1)+1)
770 PRINT CL$(1,CH+N-1);
780 PRINT CHR$(ASC(FW$(N,N))+128);
790 PRINT CL$(1,INT((38-PEEK(85))/2));
800 SOUND 0,20*RND(1)+10,10,10
810 FOR SD=1 TO 5:NEXT SD
820 SOUND 0,0,0,0
830 POSITION 0,13:PRINT CL$(1,39);
840 IF PEEK(764)=255 THEN 750
850 POSITION 0,19
860 POKE 752,0
870 PRINT "What do you think it is?";
880 PRINT CL$(1,(39-PEEK(85))/2)
890 FOR CV=20 TO 23:PRINT CL$(1,39);:NEXT CV
900 POSITION 0,20
910 POKE 764,255
920 INPUT WG$
930 IF LEN(WG$)<1 THEN 920
940 PRINT CHR$(125);M$
950 PRINT :PRINT EP$;"'s word was:"
```

```
960 POKE 85,INT(39-L)/2
970 H$=FW$:GOSUB 1310:FW$=H$
980 PRINT
990 PRINT GP$;"'s guess is:"
1000 POKE 85,INT(39-L)/2
1010 H$=WG$:GOSUB 1310:WG$=H$
1020 PRINT
1030 GOSUB 1270
1040 POKE 764,255:GET #1,K
1050 IF K=32 THEN 1080
1060 IF  NOT (K=88 OR K=120) THEN 1040
1070 GOTO 1250
1080 PRINT CHR$(125);M$
1090 IF WG$=FW$ THEN 1180
1100 PRINT :PRINT "Sorry about that, ";GP$;CHR$(46)
1110 PRINT EP$;" outsmarted you."
1120 PRINT :PRINT "You have to guess again."
1130 GOSUB 1270
1140 POKE 764,255:GET #1,K
1150 IF K=32 THEN 370
1160 IF  NOT (K=88 OR K=120) THEN 1140
1170 GOTO 1250
1180 PRINT :PRINT "That's good ";GP$;CHR$(46)
1190 PRINT :PRINT "Now it's your turn to see if you can"
1200 PRINT "outsmart ";EP$;CHR$(46)
1210 GOSUB 1270
1220 POKE 764,255:GET #1,K
1230 IF K=32 THEN PH=PH*(-1):GOTO 370
1240 IF  NOT (K=88 OR K=120) THEN 1220
1250 POKE 82,2:PRINT CHR$(125)
1260 GRAPHICS 0:END
1270 POSITION 0,20:POKE 752,0
1280 PRINT "Strike the SPACE BAR to continue"
1290 PRINT "(or the X key to end the game) ...";
1300 RETURN
1310 FOR N=1 TO LEN(H$)
1320 CH=ASC(H$(N,N))
1330 IF CH<=95 THEN 1350
1340 CH=CH-32
1350 H$(N,N)=CHR$(CH)
1360 PRINT CHR$(CH+128);
1370 IF PEEK(85)>32 AND CH=32 THEN PRINT
1380 NEXT N
1390 PRINT
1400 RETURN
```

Program 29 CODE SKILL BUILDER

"Practice makes perfect."

—Uncertain

This program is for real. It is worth the time and effort to load this program if you want to learn the International Morse Code.

```
10 REM ** CODE SKILL BUILDER **
20 REM
30 POKE 82,0
40 DIM M$(80),L$(100),L1$(6),C$(5),S$(40)
50 OPEN #1,4,0,"K:"
60 FOR K=1 TO 11:M$(LEN(M$)+1)=CHR$(32):NEXT K
70 FOR K=1 TO 4:S$(LEN(S$)+1)=M$:NEXT K
80 M$(11)="MORSE CODE GENERATOR"
90 M$(LEN(M$)+1)=CHR$(155)
100 FOR K=1 TO 40:M$(LEN(M$)+1)="*":NEXT K
110 PRINT CHR$(125):PRINT M$:PRINT
120 PRINT "SELECT A TRANSMISSION RATE:"
130 PRINT
140 PRINT CHR$(127);"1 - SLOW"
150 PRINT CHR$(127);"2 - MEDIUM"
160 PRINT CHR$(127);"3 - FAST"
170 GET #1,K
180 IF K<49 OR K>51 THEN GOTO 170
190 SP=(51-K)
200 PRINT CHR$(125):PRINT M$:PRINT
210 K=INT(36*RND(1))+1
220 RESTORE 1100
230 FOR N=1 TO K:READ C$:NEXT N
240 POSITION 0,4:PRINT "LISTEN ...";S$(1,25)
250 POKE 752,1
260 FOR N=1 TO 16:PRINT S$;:NEXT N
270 FOR T=1 TO 100:NEXT T
280 POKE 752,0
290 C=ASC(C$)
300 IF C<=57 THEN 320
310 C=C-65:RESTORE 730+C*10:GOTO 330
320 C=C-48:RESTORE 630+C*10
330 IF C<0 OR C>25 THEN GOTO 390
340 READ L1$
350 FOR L=1 TO LEN(L1$)
360 IF ASC(L1$(L,L))=46 THEN GOSUB 620:GOTO 380
370 GOSUB 680
380 NEXT L
390 FOR T=1 TO 100:NEXT T
400 POSITION 0,4
410 PRINT "WANT TO HEAR IT AGAIN (Y/N)?";
420 GET #1,K
430 IF K=89 OR K=121 THEN 240
440 IF  NOT (K=78 OR K=110) THEN 420
450 PRINT :PRINT "WHAT WAS THE CHARACTER?";
460 GET #1,K
470 PRINT CHR$(32);CHR$(K)
480 PRINT :IF CHR$(K)<>C$ THEN GOTO 510
490 PRINT "THAT IS CORRECT: ";C$;" ";L1$
500 GOTO 520
510 PRINT "THAT IS NOT CORRECT."
520 POSITION 0,14
530 PRINT "SELECT ONE:":PRINT
540 PRINT " 1 - LISTEN TO THE SAME CHARACTER."
550 PRINT " 2 - LISTEN TO A NEW CHARACTER."
560 PRINT " 3 - END THE PROGRAM."
```

```
570 GET #1,K
580 IF K=49 THEN 240
590 IF K=50 THEN GOTO 200
600 IF K<>51 THEN 570
610 POKE 82,2:PRINT CHR$(127):END
620 FOR T=1 TO 3*SP
630 SOUND 0,50,10,8
640 NEXT T
650 SOUND 0,0,0,0
660 FOR T=1 TO SP*3:NEXT T
670 RETURN
680 FOR T=1 TO 30
690 SOUND 0,50,10,8
700 NEXT T
710 SOUND 0,0,0,0
720 FOR T=1 TO SP*100:NEXT T
730 RETURN
740 DATA -----
750 DATA .----
760 DATA ..---
770 DATA ...--
780 DATA ....-
790 DATA .....
800 DATA -....
810 DATA --...
820 DATA ---..
830 DATA ----.
840 DATA .-
850 DATA -...
860 DATA -.-.
870 DATA -..
880 DATA .
890 DATA ..-.
900 DATA --.
910 DATA ....
920 DATA ..
930 DATA .---
940 DATA -.-
950 DATA .-..
960 DATA --
970 DATA -.
980 DATA ---
990 DATA .--.
1000 DATA --.-
1010 DATA .-.
1020 DATA ...
1030 DATA -
1040 DATA ..-
1050 DATA ...-
1060 DATA .--
1070 DATA -..-
1080 DATA -.--
1090 DATA --..
1100 DATA A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z,
     1,2,3,4,5,6,7,8,9,0
1110 PRINT "PLEASE TRY AGAIN"
```

```
1120 TRAP 1100
1130 GOTO 256*PEEK(187)+PEEK(186)
```

Program 30 MORSE CODE GENERATOR

"Our world would be a different place if all truck drivers had to pass the code test."
—Anonymous amateur radio operator

```
10 REM ** MORSE CODE GENERATOR **
20 REM
30 DIM M$(80),PE$(220),K$(5),D$(10),CH$(5)
40 FOR K=1 TO 10:M$(K)=CHR$(32):NEXT K
50 M$(11)="MORSE CODE GENERATOR"
60 M$(31)=CHR$(155)
70 FOR K=1 TO 40:M$(31+K)=CHR$(42):NEXT K
80 OPEN #1,4,0,"K:"
90 POKE 82,0
100 GRAPHICS 0
110 PRINT CHR$(125);M$
120 PRINT "Select a transmission rate:"
130 PRINT
140 POKE 85,5:PRINT "1 - SLOW"
150 POKE 85,5:PRINT "2 - MEDIUM"
160 POKE 85,5:PRINT "3 - FAST"
170 POKE 764,255:GET #1,K
180 IF K<49 OR K>51 THEN 170
190 K=K-48
200 IF K=1 THEN DUR=4
210 IF K=2 THEN DUR=2
220 IF K=3 THEN DUR=1
230 PRINT CHR$(125);M$
240 PRINT "Enter a sentence that is to be encoded"
250 PRINT "(up to 200 characters)."
260 INPUT PE$
270 L=LEN(PE$)
280 IF L<1 THEN 260
290 IF L<201 THEN 320
300 PRINT :PRINT "Message is too long. Try again."
310 GOTO 260
320 FOR N=1 TO LEN(PE$)
330 K$=PE$(N,N)
340 IF ASC(K$)>90 THEN K$=CHR$(ASC(K$)-32)
350 FOR T=1 TO 5*DUR:NEXT T
360 PRINT K$;
370 IF K$<>CHR$(32) THEN 390
380 FOR T=0 TO 50*DUR:NEXT T:GOTO 400
390 GOSUB 490
400 NEXT N
410 POSITION 0,20
420 PRINT "Strike the SPACE BAR to encode another"
430 PRINT "message (or the X key to end).";
440 POKE 764,255:GET #1,K
```

```
450 IF K=32 THEN 110
460 IF  NOT (K=88 OR K=120) THEN 440
470 POKE 82,2:PRINT CHR$(125)
480 GRAPHICS 0:END
490 RESTORE
500 READ D$:IF D$="#" THEN RETURN
510 IF K$<>D$(1,1) THEN 500
520 F=20
530 FOR X=2 TO LEN(D$)
540 CH$=D$(X,X)
550 IF CH$="-" THEN 600
560 FOR SD=0 TO 5*DUR
570 SOUND 0,F,10,10
580 NEXT SD
590 GOTO 630
600 FOR SD=0 TO 15*DUR
610 SOUND 0,F,10,10
620 NEXT SD
630 SOUND 0,0,0,0
640 NEXT X
650 RETURN
660 DATA A.-,B-...,C-.-.,D-..,E.,F..-.
670 DATA G--.,H....,I..,J.---,K-.-,L.-..
680 DATA M--,N-.,O---,P.--.,Q--.-,R.-.
690 DATA S...,T-,U..-,V...-,W.--,X-..-
700 DATA Y-.--,Z--..,1.----,2..---,3...--,4....-
710 DATA 5.....,6-....,7--...,8---..,9----.,0-----
720 DATA ..-.-.-,",--..--",?..--..,/-..-.,--...-
```

Program 31 WORD-FIND PUZZLE GENERATOR

"Failure is sometimes its own reward; such as seeking a needle in a haystack and finding the farmer's daughter."

—Ancient Midwestern Proverb

Word-find puzzles are quite popular these days. Such puzzles show a rectangular array of seemingly random letters of the alphabet. Hidden within that array, however, are some meaningful words. Some are arranged horizontally, and others vertically.

This program gives you the opportunity to specify eight words of up to eight characters apiece. It then arranges them in the "word-find" array for you.

```
10 REM ** WORD-FIND PUZZLE GENERATOR **
20 REM
30 OPEN #1,4,0,"K:":POKE 82,0
40 DIM M$(80),N$(64),W$(10),T(16,16),Y(16,16),M(8,8)
50 M$="WORD FIND GENERATOR":M$(20)=CHR$(155)
60 FOR K=21 TO 60:M$(K)="*":NEXT K
70 GRAPHICS 0:PRINT M$
80 FOR K=1 TO 64:N$(K)=CHR$(32):NEXT K
90 FOR X=1 TO 8:FOR N=1 TO 8:M(X,N)=32
100 NEXT N:NEXT X
```

```
110 PRINT "ENTER 8 WORDS OF 8 CHARACTERS OR LESS:"
120 POKE 84,8
130 FOR N=1 TO 8
140 IF PEEK(84)<=21 THEN GOTO 160
150 POSITION 0,8
160 PRINT "WORD #";N;":";
170 INPUT W$
180 L=LEN(W$)
190 IF L<1 THEN GOTO 140
200 IF L<=8 THEN GOTO 230
210 PRINT "TOO LONG. TRY AGAIN ..."
220 GOTO 140
230 N$((N-1)*8+1,N*8)=W$
240 NEXT N
250 FOR N=1 TO 8
260 FOR L1=N*8 TO (N-1)*8+1 STEP -1
270 IF N$(L1,L1)=CHR$(32) THEN 290
280 L1=L1-(N-1)*8:GOTO 300
290 NEXT L1
300 FOR X=1 TO L1
310 M(X,N)=ASC(N$((N-1)*8+X,(N-1)*8+X))
320 NEXT X
330 NEXT N
340 PRINT CHR$(125);M$
350 PRINT :PRINT "GENERATING WORD FIND"
360 FOR R=1 TO 16:FOR C=1 TO 16
370 T(R,C)=32
380 NEXT C:NEXT R
390 W=0
400 W=W+1
410 D=INT(RND(1)*2+1)
420 IF D=2 THEN GOTO 550
430 C=INT(RND(1)*16+1)
440 R=INT(RND(1)*8+9)
450 FOR CK=R-8 TO R-1
460 IF T(CK,C)<>32 THEN GOTO 410
470 NEXT CK
480 L=0
490 FOR CK=R-8 TO R-1
500 L=L+1
510 T(CK,C)=M(L,W)
520 NEXT CK
530 IF W<8 THEN GOTO 400
540 GOTO 660
550 R=INT(RND(1)*16+1)
560 C=INT(RND(1)*8+9)
570 FOR CK=C-8 TO C-1
580 IF T(R,CK)<>32 THEN GOTO 410
590 NEXT CK
600 L=0
610 FOR CK=C-8 TO C-1
620 L=L+1
630 T(R,CK)=M(L,W)
640 NEXT CK
650 IF W<8 THEN GOTO 400
660 PRINT CHR$(125);M$:PRINT
```

```
670 GOSUB 1010
680 POKE 84,5
690 FOR R=1 TO 16
700 PRINT
710 POKE 85,20
720 FOR C=1 TO 16
730 Y(R,C)=T(R,C)
740 B=INT(RND(1)*26+65)
750 IF T(R,C)=32 THEN T(R,C)=B
760 PRINT CHR$(T(R,C));
770 NEXT C:NEXT R
780 POSITION 0,23
790 PRINT "STRIKE ANY KEY TO SEE THE SOLUTION ...";
800 GET #1,K
810 PRINT CHR$(125);M$:PRINT
820 GOSUB 1010
830 POKE 84,5
840 FOR R=1 TO 16
850 PRINT :POKE 85,20
860 FOR C=1 TO 16
870 PRINT CHR$(Y(R,C));
880 NEXT C:NEXT R
890 POSITION 0,22
900 PRINT "STRIKE ANY KEY TO CONTINUE ...";
910 GET #1,K
920 PRINT CHR$(125);M$
930 PRINT "SELECT ONE:":PRINT
940 PRINT CHR$(127);"1 - DO A NEW PUZZLE"
950 PRINT CHR$(127);"2 - END THE PROGRAM"
960 PRINT :PRINT
970 GET #1,K
980 IF K<ASC("1") OR K>ASC("2") THEN GOTO 970
990 IF K=ASC("1") THEN GOTO 70
1000 GRAPHICS 0:POKE 82,2:END
1010 PRINT "WORD LIST"
1020 FOR N=1 TO 9:PRINT "-";:NEXT N
1030 PRINT :PRINT
1040 FOR N=1 TO 8
1050 PRINT N$((N-1)*8+1,N*8)
1060 NEXT N
1070 RETURN
```

Program 32 HI/LO GUESSING GAME

"He who plays a game well plays to delight his spirit; but he who wagers a game wagers his own soul."

—Some old-time nurd

No book of BASIC programs can be complete without a version of the ol' high/low guessing game. This one features multiple players, some wagering, and a generous

bankroll to get things started in an interesting fashion. Even if you are weary of plain old high/low guessing games, you will find this version adds a bit of spice.

```
10 REM ** BETTING HI/LO GAME **
20 REM
30 DIM P(5,2),M(5),B(5),G(5)
40 DIM X$(40),Y$(40),L$(40),M$(80)
50 DIM XX$(40),P$(100)
60 FOR K=1 TO 17:X$(K)=CHR$(32):NEXT K
70 FOR K=1 TO 40
80 Y$(K)=CHR$(36):L$(K)=CHR$(61)
90 NEXT K
100 M$=X$
110 M$(18)="HI/LOW":M$(24)=CHR$(155)
120 M$(25)=Y$
130 POKE 82,0
140 OPEN #1,4,0,"K:"
150 GRAPHICS 0:PRINT CHR$(125);M$
160 PRINT "This is a Hi/Lo guessing game for 1 to"
170 PRINT "5 players. The computer picks a num-"
180 PRINT "ber between 1 and 100. It is then up"
190 PRINT "to the player(s) to guess what it is."
200 PRINT :PRINT "A little side betting adds some spice"
210 PRINT "to the whole thing."
220 POSITION 0,20
230 PRINT "Strike any key to continue ...";
240 GET #1,K
250 PRINT CHR$(125);M$
260 PRINT "How many people are playing ";
270 GOSUB 1380:NP=XX
280 IF NP>0 AND NP<=5 THEN 300
290 GOTO 270
300 PRINT :PRINT
310 FOR N=1 TO NP
320 PRINT CHR$(125);M$
330 PRINT "Player #";N;", enter your name:"
340 PRINT
350 INPUT X$
360 LN=LEN(X$)
370 IF LN>0 AND LN<20 THEN 390
380 PRINT "Use a real name, please.":GOTO 350
390 P$(LEN(P$)+1)=X$
400 P(N,1)=LEN(P$)-LN+1
410 P(N,2)=LEN(P$)
420 M(N)=100
430 NEXT N
440 PRINT CHR$(125);M$
450 PRINT "Place your bet:":PRINT
460 P=0
470 PRINT "Player";
480 POKE 85,21:PRINT "FUNDS";
490 POKE 85,28:PRINT "BET"
500 PRINT L$:PRINT
510 FOR N=1 TO NP
```

```
520 PRINT P$(P(N,1),P(N,2));
530 POKE 85,21:PRINT "$";M(N);
540 IF M(N)=0 THEN B(N)=0:PRINT :GOTO 610
550 POKE 85,28:PRINT "$";
560 GOSUB 1380:B(N)=XX
570 IF B(N)>0 AND B(N)<=M(N) THEN 600
580 POKE 85,18
590 PRINT "Try again:";:GOTO 550
600 P=P+B(N)
610 NEXT N
620 PRINT :PRINT "The total pot is $";P
630 POSITION 0,20
640 PRINT "Strike any key to continue ...";
650 GET #1,K
660 RG=INT(100*RND(1)+1)
670 PRINT CHR$(125);M$
680 PRINT "Guess a number between 1 and 100:":PRINT
690 PRINT "Player";
700 POKE 85,21:PRINT "GUESS"
710 LG=0:HG=0
720 PRINT L$
730 FOR N=1 TO NP
740 IF M(N)=0 THEN G(N)=0:GOTO 800
750 PRINT P$(P(N,1),P(N,2));
760 POKE 85,21
770 GOSUB 1380:G=INT(XX)
780 IF G>0 AND G<=100 THEN G(N)=G:GOTO 800
790 POKE 85,11:PRINT "Try again:":GOTO 770
800 NEXT N
810 FOR N=1 TO NP
820 IF M(N)=0 THEN 860
830 IF G(N)<RG THEN LG=LG+1
840 IF G(N)>RG THEN HG=HG+1
850 IF G(N)=RG THEN 1010
860 NEXT N
870 PRINT
880 IF LG=1 THEN PRINT "1 player ";:GOTO 900
890 PRINT LG;" players ";
900 PRINT "guessed too low."
910 IF HG=1 THEN PRINT "1 player ";:GOTO 930
920 PRINT HG;" players ";
930 PRINT "guessed too high."
940 POSITION 0,20
950 PRINT "Strike the SPACE BAR to guess again"
960 POKE 85,3:PRINT "(or the X key to end the game)";
970 GET #1,K
980 IF K=32 THEN 670
990 IF K=88 OR K=120 THEN 1270
1000 GOTO 970
1010 PRINT CHR$(125);M$
1020 FOR NS=1 TO 4:FOR SS=100 TO 10 STEP -4
1030 SOUND 0,SS,10,10
1040 NEXT SS:NEXT NS
1050 SOUND 0,0,0,0
1060 PRINT P$(P(N,1),P(N,2))
1070 PRINT " guessed correctly."
```

```
1080 PRINT :PRINT "The number is ";RG
1090 NB=0
1100 FOR K=1 TO NP
1110 IF K=N THEN M(K)=M(K)+P-B(K):GOTO 1140
1120 M(K)=M(K)-B(K)
1130 IF M(K)<=0 THEN NB=NB+1
1140 NEXT K
1150 IF NB<>NP-1 THEN 1200
1160 POSITION 0,20
1170 PRINT "Strike any key ...";
1180 GET #1,K
1190 GOTO 1270
1200 POSITION 0,20
1210 PRINT "Strike the SPACE BAR for the next round"
1220 POKE 85,3:PRINT "(or the X key to end the game)";
1230 GET #1,K
1240 IF K=32 THEN 440
1250 IF K=88 OR K=120 THEN 1270
1260 GOTO 1230
1270 PRINT CHR$(125);M$
1280 PRINT "Game Summary:":PRINT L$
1290 FOR N=1 TO NP
1300 PRINT P$(P(N,1),P(N,2));
1310 POKE 85,21:PRINT "$";M(N)
1320 NEXT N
1330 POSITION 0,20
1340 PRINT "Strike any key ...";
1350 GET #1,K
1360 POKE 82,2:POKE 752,0
1370 GRAPHICS 0:END
1380 INPUT XX$
1390 FOR NX=1 TO LEN(XX$)
1400 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 1420
1410 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 1380
1420 NEXT NX
1430 XX=VAL(XX$)
1440 RETURN
```

Program 33 FAIR HI/LO

"What's fair is fair."

—Katharine Hepburn in *The African Queen*

Wagering on the Hi/Lo Guessing Game (Program 32) can be risky business, and it can be downright silly business if you are losing. After all, it's your computer, and no one but you has a right to make a couple of bucks with it.

This version of the ol' HI/LO game gives you a chance to recoup some of your losses. It runs just like the legitimate version, but you can set it up to load the results very heavily in your favor. Here's how it works.

When the program asks you to enter your name, make sure that you sneak a space at the end of your entry. If your first name is Billy, for instance, type your name as BILLY and discretely strike the space bar before striking the return key. From that moment on, the computer knows when it is dealing with you.

Then, when it is your turn to guess the number, enter any number you choose. The "secret" number becomes *your guess plus 10.* So if you guess 50 the first time, the correct answer will be 60—and you can enter that number (and win the round) anytime thereafter. Incidentally, if your first guess is greater than 90, the correct number becomes 90.

Omit the space after your name, and the game runs in a perfectly legitimate fashion.

```
10 REM ** FAIR BETTING HI/LO GAME **
20 REM
30 DIM M$(80),Y$(40),CL$(40),NP$(1)
40 DIM X$(80),P$(64),P(5,2),L$(40)
50 DIM M(5),XX$(20),G(5),B(5)
60 FOR K=1 TO 40
70 Y$(K)=CHR$(36):CL$(K)=CHR$(32)
80 L$(K)=CHR$(95)
90 NEXT K
100 M$=CL$(1,17):M$(18)="HI/LO"
110 M$(23)=CHR$(155):M$(24)=Y$
120 POKE 82,0:OPEN #1,4,0,"K:"
130 GRAPHICS 0
140 PRINT CHR$(125);M$
150 PRINT "This is a Hi/Lo guessing game for 1 to"
160 PRINT "5 players. The computer picks a num-"
170 PRINT "ber between 1 and 100. It is then up"
180 PRINT "to the player(s) to guess what it is."
190 PRINT :PRINT "A little side betting adds some spice"
200 PRINT "to the whole thing."
210 POSITION 0,20
220 PRINT "Strike any key to continue ...";
230 POKE 764,255:GET #1,K
240 PRINT CHR$(125);M$
250 PRINT "How many people are playing ";
260 PRINT "(1-5)";:INPUT NP$
270 IF NP$<"1" OR NP$>"5" THEN 260
280 NP=VAL(NP$)
290 PRINT :PRINT
300 PRINT CHR$(125);M$
310 GOSUB 1390
320 FOR N=1 TO NP:M(N)=100:NEXT N
330 SETCOLOR 1,13,0:SETCOLOR 2,13,14
340 SETCOLOR 4,2,4
350 PRINT CHR$(125);M$
360 CF=0
370 PRINT "Place your bet:":PRINT
380 P=0
390 PRINT "PLAYER";
400 POKE 85,20:PRINT "FUNDS";
410 POKE 85,27:PRINT "BET"
420 PRINT L$:PRINT
430 FOR N=1 TO NP
```

```
440 PRINT P$(P(N,1),P(N,2));
450 POKE 85,20
460 PRINT "$";M(N);
470 IF M(N)=0 THEN B(N)=0:PRINT :GOTO 530
480 POKE 85,27:PRINT "$";
490 GOSUB 1610:B(N)=XX
500 IF B(N)>0 AND B(N)<=M(N) THEN 520
510 POKE 85,17:PRINT "Try again:";:GOTO 480
520 P=P+B(N)
530 NEXT N
540 PRINT :PRINT "The total pot is $";P
550 POSITION 0,20
560 PRINT "Strike any key to continue ...";
570 POKE 764,255:GET #1,K
580 RG=INT(100*RND(1)+1)
590 SETCOLOR 1,3,0:SETCOLOR 2,3,14
600 SETCOLOR 4,8,0
610 PRINT CHR$(125);M$
620 PRINT "Guess a number between 1 and 100:"
630 PRINT
640 PRINT "PLAYER";
650 POKE 85,20:PRINT "GUESS"
660 LG=0:HG=0
670 PRINT L$
680 FOR N=1 TO NP
690 IF M(N)=0 THEN G(N)=0:GOTO 780
700 PRINT P$(P(N,1),P(N,2));
710 POKE 85,20
720 GOSUB 1610:G=XX
730 IF G>0 AND G<=100 THEN G(N)=G:GOTO 750
740 POKE 85,10:PRINT "Try again:":GOTO 720
750 IF  NOT (CF=0 AND P$(P(N,2),P(N,2))=CHR$(32)) THEN 780
760 IF G(N)+10>100 THEN RG=90:CF=1:GOTO 780
770 RG=G(N)+10:CF=1
780 NEXT N
790 FOR N=1 TO NP
800 IF M(N)=0 THEN 840
810 IF G(N)<RG THEN LG=LG+1
820 IF G(N)>RG THEN HG=HG+1
830 IF G(N)=RG THEN 990
840 NEXT N
850 PRINT
860 IF LG=1 THEN PRINT "1 player ";:GOTO 880
870 PRINT LG;" players ";
880 PRINT "guessed too low."
890 IF HG=1 THEN PRINT "1 player ";:GOTO 910
900 PRINT HG;" players ";
910 PRINT "guessed too high."
920 POSITION 0,20
930 PRINT "Strike the SPACE BAR to guess again"
940 POKE 85,2:PRINT "(or the X key to end the game)";
950 POKE 764,255:GET #1,K
960 IF K=32 THEN 590
970 IF K=88 OR K=120 THEN 1240
980 GOTO 950
```

```
990 SETCOLOR 1,13,14:SETCOLOR 2,13,0
1000 SETCOLOR 4,0,14
1010 PRINT CHR$(125);M$
1020 FOR SN=1 TO 4:FOR SS=20 TO 10 STEP -1
1030 SOUND 0,SS,10,10
1040 NEXT SS
1050 SOUND 0,0,0,0
1060 NEXT SN
1070 PRINT P$(P(N,1),P(N,2));CHR$(32);
1080 PRINT "guessed correctly."
1090 PRINT :PRINT "The number is";CHR$(32);RG
1100 NB=0
1110 FOR K=1 TO NP
1120 IF K=N THEN M(K)=M(K)+P-B(K):GOTO 1150
1130 M(K)=M(K)-B(K)
1140 IF M(K)<=0 THEN NB=NB+1
1150 NEXT K
1160 IF NB=NP-1 THEN 1240
1170 POSITION 0,20
1180 PRINT "Strike the SPACE BAR for the next round"
1190 POKE 85,2:PRINT "(or the X key to end the game)";
1200 POKE 764,255:GET #1,K
1210 IF K=32 THEN 330
1220 IF K=88 OR K=120 THEN 1270
1230 GOTO 1200
1240 POSITION 0,20
1250 PRINT "Strike any key to continue ...";
1260 POKE 764,200:GET #1,K
1270 SETCOLOR 1,0,0:SETCOLOR 2,0,14
1280 SETCOLOR 4,8,0
1290 PRINT CHR$(125);M$
1300 PRINT "Game Summary:":PRINT L$
1310 FOR N=1 TO NP
1320 PRINT P$(P(N,1),P(N,2));
1330 POKE 85,20:PRINT "$";M(N)
1340 NEXT N
1350 POSITION 0,20
1360 PRINT "Strike any key ...";
1370 POKE 764,255:GET #1,K
1380 POKE 82,2:GRAPHICS 0:END
1390 FOR N=1 TO NP
1400 CV=2*N+6
1410 X$=""
1420 POSITION 0,CV
1430 PRINT "Player #";N;", enter your first name:"
1440 PRINT CL$(1,39);:POKE 85,0:PRINT " ";
1450 GET #1,K
1460 IF K=155 THEN 1530
1470 PRINT CHR$(K);
1480 IF  NOT (K=126 OR K=156) THEN 1510
1490 IF LEN(X$)<=1 THEN X$="":GOTO 1450
1500 X$=X$(1,LEN(X$)-1):GOTO 1450
1510 X$(LEN(X$)+1)=CHR$(K)
1520 GOTO 1450
1530 IF LEN(X$)>2 AND LEN(X$)<12 THEN 1560
1540 PRINT
```

```
1550 PRINT "Aww, get serious!":GOTO 1410
1560 X=LEN(X$)-1
1570 P(N,1)=LEN(P$)+1:P(N,2)=P(N,1)+X
1580 P$(LEN(P$)+1)=X$
1590 NEXT N
1600 RETURN
1610 INPUT XX$
1620 FOR NX=1 TO LEN(XX$)
1630 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 1650
1640 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 1610
1650 NEXT NX
1660 XX=VAL(XX$)
1670 RETURN
```

Program 34 COMBINATION LOCK

"If it is true that the last bolt is always the one that sticks, it is equally true that the last key is the one that opens the lock."

—Overheard in a hardware store in Hong Kong

If you are no good at this game, you will most likely give up with no harm done. If you are fairly good, it will drive you nuts. If you are exceedingly good, you will never win. In any event, it's worth a try.

```
10 REM ** COMBINATION LOCK GAME **
20 REM
30 DIM M$(40),L(50),CL$(40),A(10),G(10)
40 FOR K=1 TO 40:CL$(K)=CHR$(32):NEXT K
50 M$="COMBINATION LOCK CHALLENGE"
60 OPEN #1,4,0,"K:"
70 GRAPHICS 0
80 PRINT CHR$(125);:POKE 85,6:PRINT M$
90 GOSUB 660
100 POSITION 1,20
110 PRINT "Strike any key to begin ...";
120 L=2
130 POKE 764,255:GET #1,K
140 SETCOLOR 1,0,0:SETCOLOR 2,0,8
150 SETCOLOR 4,3,0
160 PRINT CHR$(125);
170 PRINT M$:PRINT "For Locksmith Level ";L
180 PRINT :GOSUB 660
190 S=0
200 PRINT "Enter combinations of ";L;" digits"
210 PRINT "(or X to abort the attempt)":PRINT
220 FOR N=1 TO L:A(N)=INT(10*RND(1)):NEXT N
230 POSITION 2,9
240 CV=PEEK(84):CH=PEEK(85)
250 PRINT CL$(1,38-PEEK(85));
260 POSITION CH,CV:PRINT "?";
```

```
270 FOR N=1 TO L
280 GET #1,K
290 IF  NOT (K=88 OR K=120) THEN 320
300 IF L>1 THEN L=L-1:AF=2:GOTO 590
310 AF=0:GOTO 580
320 IF K<48 OR K>57 THEN 280
330 PRINT CHR$(K);:G(N)=K-48
340 FOR X=1 TO L
350 IF G(N)<>A(X) THEN 400
360 FOR SS=10 TO 20
370 SOUND 0,SS,10,ABS(20-SS)
380 NEXT SS
390 SOUND 0,0,0,0
400 NEXT X:NEXT N
410 PRINT :S=S+1
420 FOR N=1 TO L
430 IF PEEK(84)>=18 THEN POSITION 2,9
440 IF A(N)<>G(N) THEN 240
450 NEXT N
460 POSITION 2,18
470 PRINT "THAT IS THE COMBINATION!! "
480 FOR SN=1 TO 4:FOR SS=30 TO 10 STEP -1
490 SOUND 0,SS,10,10
500 NEXT SS:NEXT SN
510 SOUND 0,0,0,0
520 PRINT "You got it in ";S;" attempt";
530 IF S<>1 THEN PRINT "s";
540 PRINT CHR$(46):PRINT
550 IF S<=L^2 THEN L=L+1:AF=1:GOTO 570
560 AF=0
570 IF AF=1 THEN PRINT "You have advanced to"
580 IF AF=0 THEN PRINT "You retain";
590 IF AF=2 THEN PRINT :PRINT "You have been demoted to"
600 PRINT " Locksmith Level ";L
610 PRINT "Do you want to continue (Y/N)? ";
620 GET #1,K
630 IF K=89 OR K=121 THEN 140
640 IF  NOT (K=78 OR K=110) THEN 620
650 GRAPHICS 0:END
660 FOR K=1 TO 36:PRINT CHR$(61);:NEXT K
670 PRINT :RETURN
```

Program 35 9-CELL MAGIC SQUARE GENERATOR

"The advancement and perfection of mathematics are intimately connected with the prosperity of the State."

—Napoleon I

A 9-cell magic square is a 3 × 3 arrangement of numbers that add up to the same value, when regarded horizontally, vertically and diagonally, as shown on the following page.

X	X	X

X	X	X

X	X	X

X		
X		
X		

	X	
	X	
	X	

		X
		X
		X

X		
	X	
		X

		X
	X	
X		

```
10 REM ** 9-CELL MAGIC SQUARE **
20 REM
30 DIM M$(80),L(3,3)
40 GRAPHICS 0:POKE 82,0
50 OPEN #1,4,0,"K:"
60 FOR K=1 TO 9:M$(K)=CHR$(32):NEXT K
70 M$(LEN(M$)+1)="9-CELL MAGIC SQUARE"
80 M$(LEN(M$)+1)=CHR$(155)
90 FOR K=1 TO 39
100 M$(LEN(M$)+1)=CHR$(45)
110 NEXT K
120 FOR ROW=1 TO 3:FOR COL=1 TO 3
130 READ X:L(ROW,COL)=X
140 NEXT COL:NEXT ROW
150 S=INT(99*RND(1))+15
160 IF (S/3)<>INT(S/3) THEN 150
170 SETCOLOR 2,2,14
180 SETCOLOR 1,2,2
190 PRINT CHR$(125);M$
200 N=(S-15)/3
210 PRINT "The magic sum for this square is ";S
220 FOR ROW=1 TO 3:FOR COL=1 TO 3
230 POSITION 1,ROW*3+5
240 POKE 85,4*COL+10
```

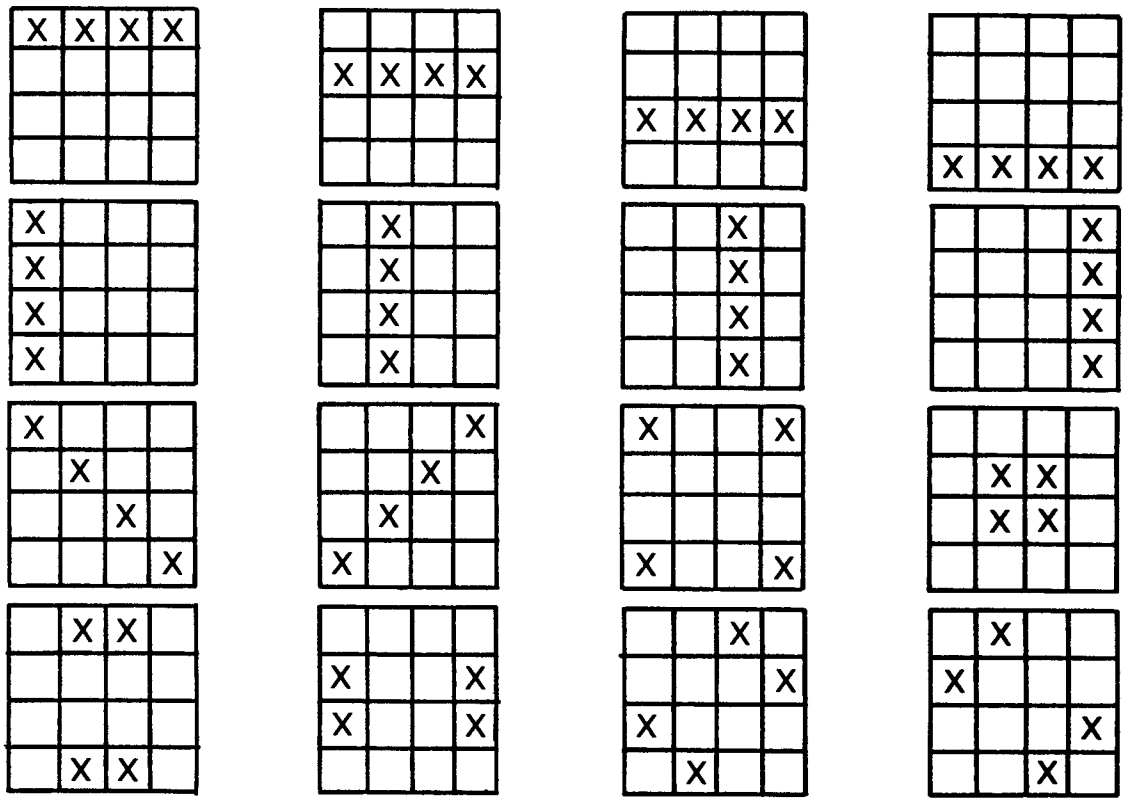
```
250 PRINT L(ROW,COL)+N
260 NEXT COL:PRINT :PRINT :NEXT ROW
270 POSITION 0,20
280 PRINT "Strike the SPACE BAR to see another"
290 PRINT "Magic Square (or strike the X key to"
300 PRINT "end this program) ...";
310 GET #1,K
320 IF K=32 THEN 150
330 IF  NOT (K=88 OR K=120) THEN 310
340 POKE 82,2:GRAPHICS 0:PRINT CHR$(125):END
350 DATA 8,1,6,3,5,7,4,9,2
```

Program 36 16-CELL MAGIC SQUARE

"Mathematics is the queen of sciences and number theory the queen of mathematics."

—Karl F. Gauss

A 16-cell magic square is not only larger than its 9-cell counterpart (Program 35), but its sums can be derived in a greater number of ways as shown below.



```
10 REM ** 16-CELL MAGIC SQUARE **
20 REM
```

```
30 DIM M$(80),L(4,4)
40 TRAP 480
50 FOR K=1 TO 9:M$(K)=CHR$(32):NEXT K
60 M$(LEN(M$)+1)="16-CELL MAGIC SQUARE"
70 M$(LEN(M$)+1)=CHR$(155)
80 FOR K=1 TO 39
90 M$(LEN(M$)+1)=CHR$(45)
100 NEXT K
110 FOR ROW=1 TO 4:FOR COL=1 TO 4
120 READ X:L(ROW,COL)=X
130 NEXT COL:NEXT ROW
140 OPEN #1,4,0,"K:"
150 GRAPHICS 0:POKE 82,0
160 SETCOLOR 2,2,14
170 SETCOLOR 1,2,2
180 PRINT CHR$(125);M$
190 PRINT "Enter a Magic Square sum of your choice"
200 PRINT "(any whole number betweem 34 and 1000):"
210 PRINT :INPUT S
220 IF S>=34 AND S<=1000 THEN 250
230 PRINT :PRINT "Your selection is out of range."
240 PRINT "Please try again ...":GOTO 210
250 PRINT CHR$(125);M$
260 PRINT "You selected a sum of ";S;" for your"
270 PRINT "Magic Square. The square looks like"
280 PRINT "this:"
290 PRINT :PRINT :PRINT
300 NR=(S-30)/4:N=INT(NR):R=(NR-N)*4
310 FOR ROW=1 TO 4:FOR COL=1 TO 4
320 IF L(ROW,COL)>=13 THEN 360
330 POKE 85,4*COL+7
340 PRINT L(ROW,COL)+N-1;
350 GOTO 380
360 POKE 85,4*COL+7
370 PRINT L(ROW,COL)+N+R-1;
380 NEXT COL:PRINT :PRINT :NEXT ROW
390 POSITION 0,20
400 PRINT "Strike the SPACE BAR for another square"
410 PRINT "or strike the X key to end the program.";
420 GET #1,K
430 IF K=32 THEN 150
440 IF  NOT (K=88 OR K=120) THEN 420
450 POKE 82,2:PRINT CHR$(125)
460 GRAPHICS 0:END
470 DATA 8,11,14,1,13,2,7,12,3,16,9,6,10,5,4,15
480 PRINT "Invalid entry. Try again ..."
490 TRAP 480
500 GOTO 256*PEEK(187)+PEEK(186)
```

Program 37 NUMBER-SEQUENCE TEST

"Geez, I hate these kinds of problems!"

—Overheard during an S.A.T. examination

```
10 REM ** NUMBER-SEQUENCE TEST **
20 REM
30 DIM M$(80),S(4)
40 FOR K=1 TO 10:M$(K)=CHR$(32):NEXT K
50 M$(LEN(M$)+1)="NUMBER-SEQUENCE TEST"
60 M$(LEN(M$)+1)=CHR$(155)
70 FOR K=1 TO 40
80 M$(LEN(M$)+1)=CHR$(42)
90 NEXT K
100 OPEN #1,4,0,"K:"
110 GRAPHICS 0:POKE 82,0
120 SETCOLOR 2,0,14
130 SETCOLOR 1,0,2
140 PRINT CHR$(125);M$
150 PRINT "The computer is about to display a list"
160 PRINT "of numbers. Your task is to determine"
170 PRINT "the next number in the sequence."
180 POSITION 0,20
190 PRINT "Strike any key to see the list ...";
200 GET #1,K
210 PRINT CHR$(125);M$
220 PRINT "Here is a sequence of numbers:"
230 PRINT
240 M=INT(5*RND(1))+1
250 A=INT(10*RND(1))-5
260 S=INT(10*RND(1))+1
270 POSITION 5,5
280 FOR K=1 TO 4
290 S(K)=S
300 PRINT S;CHR$(44);
310 IF K=4 THEN PRINT "..."
320 S=S*M+A
330 NEXT K
340 POSITION 0,16
350 PRINT "What is the next value";
360 INPUT N
370 PRINT CHR$(125);M$
380 PRINT "You selected:"
390 PRINT :POKE 85,5:PRINT N
400 PRINT
410 PRINT "The correct sequence is:"
420 PRINT :POKE 85,5
430 FOR K=1 TO 4:PRINT S(K);CHR$(44);
440 NEXT K
450 PRINT S
460 PRINT :PRINT
470 IF N=S THEN PRINT "You are correct.":GOTO 490
480 PRINT "Sorry about that."
490 POSITION 0,20
500 PRINT "Strike the SPACE BAR to try again"
510 PRINT "(or the X key to end the program) ...";
520 GET #1,K
530 IF K=32 THEN 210
540 IF  NOT (K=88 OR K=120) THEN 520
```

```
550 GRAPHICS 0:POKE 82,2:PRINT CHR$(125)
560 END
```

Program 38 IMPROVED CASH FLOW

"A penny under the table is worth ten in the bank."

—Final entry in the diary of an anonymous income-tax evader

If you share your checking account with another person, there are times when it can be rather troublesome to have that individual spend too much for you. This account-balancing program can be exceedingly helpful in that regard.

Enter the account history as requested by the program. Striking the space bar to review the account, however, shows a bunch of phony figures that makes it appear that you have far less money than you do. That is the version you should show your checkbook partner. But when you want to review the truth of the matter, substitute the RETURN key for the space bar.

```
10 REM ** CASH-FLOW MINDER **
20 REM
30 DIM M$(80),XX$(40),F(10),Y(10)
40 DIM B(10),C(10),Z(10)
50 FOR K=1 TO 12:M$(K)=CHR$(32):NEXT K
60 M$(13)="CASH-FLOW MINDER"
70 M$(LEN(M$)+1)=CHR$(155)
80 FOR K=1 TO 40
90 M$(LEN(M$)+1)=CHR$(36)
100 NEXT K
110 OPEN #1,4,0,"K:"
120 GRAPHICS 0:POKE 82,0
130 PRINT CHR$(125);M$
140 PRINT "Keeping records of cash flow is a vital"
150 PRINT "part of modern business. Some tech-"
160 PRINT "niques, however, are better than others"
170 PRINT "(as illustrated by this program)."
180 PRINT :PRINT
190 POKE 752,1
200 POKE 85,15:PRINT "NOTICE"
210 FOR N=1 TO 4
220 FOR SS=16 TO 0 STEP -1
230 SOUND 0,80,10,SS
240 FOR XX=1 TO 10:NEXT XX
250 NEXT SS
260 NEXT N
270 PRINT :POKE 85,5
280 PRINT "The authors of this program"
290 POKE 85,5
300 PRINT "will NOT accompany you to"
310 POKE 85,5
320 PRINT "an IRS audit."
```

```
330 POSITION 0,20
340 POKE 752,0
350 PRINT "Strike any key to begin ...";
360 GET #1,K
370 SETCOLOR 1,12,2:SETCOLOR 2,12,14
380 PRINT CHR$(125);M$
390 PRINT "Enter your current account balance:"
400 PRINT
410 POKE 85,5:PRINT "$";
420 GOSUB 1170:A=XX
430 X=INT(10*A)/100
440 PRINT CHR$(125);M$
450 N=0
460 PRINT "Enter up to 10 deposits to that"
470 PRINT "account. Enter 0 to end the list"
480 PRINT "at any time."
490 GOSUB 1080
500 NB=N
510 FOR N=1 TO NB
520 B(N)=F(N):Y(N)=INT(10*F(N))/100
530 NEXT N
540 PRINT CHR$(125);M$
550 PRINT "Enter up to 10 debits to that account."
560 PRINT "Enter 0 to end the list at any time."
570 GOSUB 1080
580 NC=N
590 FOR N=1 TO NC
600 C(N)=F(N):Z(N)=INT(100*F(N))/10
610 NEXT N
620 PRINT CHR$(125);M$
630 PRINT
640 PRINT "Deposit Summary:":PRINT
650 BS=0
660 FOR N=1 TO NB
670 PRINT "$";
680 IF PH=0 THEN 710
690 PRINT B(N)
700 BS=BS+B(N):GOTO 730
710 PRINT Y(N)
720 BS=BS+Y(N)
730 NEXT N
740 POSITION 20,4
750 PRINT "Debit Summary:":PRINT
760 CS=0
770 FOR N=1 TO NB
780 POKE 85,20:PRINT "$";
790 IF PH=0 THEN 820
800 PRINT C(N)
810 CS=CS+C(N):GOTO 840
820 PRINT Z(N)
830 CS=CS+Z(N)
840 NEXT N
850 POSITION 0,21
860 PRINT "Strike any key to see totals ...";
870 GET #1,K
880 PRINT CHR$(125);M$
```

```
890 PRINT "Starting Balance:$";
900 IF PH=0 THEN PRINT X:GOTO 920
910 PRINT A
920 PRINT "Total Deposits:$";BS
930 PRINT "Total Debits:$";CS
940 PRINT :PRINT "Current Balance:$";
950 IF PH=0 THEN 970
960 PRINT A+BS-CS:GOTO 980
970 PRINT X+BS-CS
980 POSITION 0,21
990 PRINT "Strike the SPACE BAR to see again"
1000 PRINT "(or the X key to end) ...";
1010 GET #1,K
1020 IF K=32 THEN PH=0:GOTO 1060
1030 IF K=155 THEN PH=1:GOTO 1070
1040 IF  NOT (K=88 OR K=120) THEN 1010
1050 POKE 82,2:GRAPHICS 0:END
1060 SETCOLOR 1,4,2:SETCOLOR 2,4,14:GOTO 620
1070 SETCOLOR 1,0,2:SETCOLOR 2,0,14:GOTO 620
1080 N=1
1090 PRINT
1100 POKE 85,5:PRINT "$";
1110 GOSUB 1170:F(N)=XX
1120 IF F(N)=0 THEN 1160
1130 N=N+1
1140 IF N>10 THEN 1160
1150 GOTO 1100
1160 N=N-1:RETURN
1170 INPUT XX$
1180 DF=0
1190 FOR NX=1 TO LEN(XX$)
1200 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 1240
1210 IF XX$(NX,NX)<>"." THEN 1230
1220 DF=DF+1:IF DF<=1 THEN 1240
1230 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 1170
1240 NEXT NX
1250 XX=VAL(XX$)
1260 RETURN
```

Program 39 COUNT THE STARS

Count the stars in the cold, dark sky,
Count the cheese balls in frosty moon's eye.
Make a wish and turn 'round twice,
Get yourself dizzy and fall on the ice.

—Medieval Hebrew Proverb

```
10 REM ** COUNT THE STARS **
20 REM
30 DIM M$(80),C$(20),T$(2)
40 M$="COUNT THE STARS"
50 M$(16)=CHR$(155)
60 FOR K=1 TO 40
```

```
70 M$(LEN(M$)+1)=CHR$(45)
80 NEXT K
90 C$="SECONDS 'TIL DAWN:"
100 OPEN #1,4,0,"K:"
110 POKE 82,0
120 GRAPHICS 0
130 SETCOLOR 1,7,14:SETCOLOR 2,7,0
140 POKE 752,1
150 PRINT CHR$(125);M$
160 X=INT(100*RND(1)+50)
170 FOR N=1 TO X
180 COL=INT(39*RND(1))
190 ROW=INT(16*RND(1)+3)
200 LOCATE COL,ROW,CH
210 IF CH=42 THEN 180
220 POSITION COL,ROW:PRINT CHR$(42);
230 NEXT N
240 POSITION 2,21
250 FOR N=1 TO LEN(C$)
260 PRINT CHR$(ASC(C$(N))+128);
270 NEXT N
280 FOR T=9 TO 0 STEP -1
290 POSITION LEN(C$)+2,21
300 PRINT CHR$(T+176);
310 FOR D=1 TO 150:NEXT D
320 FOR XT=10 TO 1 STEP -1
330 SOUND 0,800,10,XT
340 NEXT XT
350 SOUND 0,0,0,0
360 NEXT T
370 GRAPHICS 0
380 PRINT M$
390 PRINT :PRINT "How many stars were in the sky";
400 INPUT NS
410 PRINT :PRINT "There were ";X;" stars in the sky."
420 PRINT
430 G=ABS(NS-X)
440 IF G<100 THEN 480
450 PRINT "Maybe you ought to spend your evenings"
460 PRINT "doing something more constructive."
470 GOTO 590
480 IF G<50 THEN 520
490 PRINT "That's not so good, but you could do"
500 PRINT "worse."
510 GOTO 590
520 IF G<10 THEN 550
530 PRINT "Not a bad guess."
540 GOTO 590
550 IF G=0 THEN 580
560 PRINT "Close, but no cigar."
570 GOTO 590
580 PRINT "HOW IN THE WORLD DID YOU DO THAT ???"
590 POSITION 0,20
600 PRINT "Strike the SPACE BAR to try again (or"
610 PRINT "the X key to end the program) ...";
620 GET #1,K
```

```
630 IF K=32 THEN 120
640 IF  NOT (K=88 OR K=120) THEN 620
650 POKE 82,2:PRINT CHR$(125)
660 GRAPHICS 0:END
```

Program 40 SIMPLE DICE ROLL

"Maybe the best way to throw dice is into the river."
—Overheard one morning on a river boat near Memphis

```
10 REM ** SIMPLE DICE ROLL **
20 REM
30 DIM M$(80),D(6)
40 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
50 M$(LEN(M$)+1)="DICE GAME"
60 M$(LEN(M$)+1)=CHR$(155)
70 FOR K=1 TO 40
80 M$(LEN(M$)+1)=CHR$(42)
90 NEXT K
100 OPEN #1,4,0,"K:"
110 TRAP 450
120 GRAPHICS 0:POKE 82,0
130 SETCOLOR 2,12,2
140 SETCOLOR 1,12,14
150 PRINT CHR$(125);M$
160 PRINT "How many dice do you want to roll?"
170 PRINT :POKE 85,5:PRINT "(1 thru 6)";
180 INPUT ND
190 ND=INT(ND):IF ND>0 AND ND<7 THEN 220
200 PRINT :PRINT "Invalid number of dice."
210 PRINT "Try again ...":GOTO 180
220 POSITION 0,20
230 PRINT "Strike any key to begin ...";
240 GET #1,K
250 PRINT CHR$(125);M$
260 DT=0
270 FOR N=1 TO ND
280 D(N)=INT(6*RND(1)+1)
290 POKE 85,10
300 PRINT "DIE ";N;": ";D(N)
310 PRINT
320 DT=DT+D(N)
330 NEXT N
340 IF ND=1 THEN 370
350 PRINT :PRINT
360 PRINT "Total: ";DT
370 POSITION 0,20
380 PRINT "Strike the SPACE BAR to roll again"
390 PRINT "(or the X key to end the program)";
400 GET #1,K
410 IF K=32 THEN 250
420 IF  NOT (K=88 OR K=120) THEN 400
```

```
430 GRAPHICS 0:POKE 82,2:PRINT CHR$(125)
440 END
450 PRINT "Invalid entry. Try again ..."
460 TRAP 450
470 GOTO 256*PEEK(187)+PEEK(186)
```

Program 41 BANKROLL DICE

"The urge to gamble is so universal and its practice so pleasurable that I assume it must be evil."

—Heywood Brown

This program can help you pay for your computer or, alternatively, win you a free ride to a dark place in the countryside.

```
10 REM ** FAIR DICE GAME **
20 REM
30 DIM M$(80),CL$(40)
40 OPEN #1,4,0,"K:"
50 M$="BANKROLL DICE (Credit Limit of $25,000)"
60 M$(LEN(M$)+1)=CHR$(155)
70 FOR K=1 TO 40
80 M$(LEN(M$)+1)=CHR$(36)
90 CL$(K)=CHR$(32)
100 NEXT K
110 TRAP 1330
120 GRAPHICS 0:POKE 82,0
130 SETCOLOR 2,15,14
140 SETCOLOR 1,15,2
150 PRINT CHR$(125);M$
160 PRINT "Here is your golden opportunity to roll"
170 PRINT "a die, betting against this computer."
180 PRINT "(What do computers know about dice,"
190 PRINT "anyhow?)"
200 PRINT :PRINT "You now have a token credit of $1000,"
210 PRINT "but your credit is good up to the house"
220 PRINT "limit of $25,000."
230 POSITION 0,20
240 PRINT "Strike any key to begin getting rich ...";
250 GET #1,K
260 PM=1000
270 SETCOLOR 2,12,2
280 SETCOLOR 1,12,14
290 PRINT CHR$(125);M$
300 IF PM<0 THEN 320
310 PRINT "You now have $";PM:GOTO 330
320 PRINT "You are now in the hole by $";ABS(PM)
330 PRINT :PRINT "Call your number (1-6) ";
340 GET #1,K
350 IF K<49 OR K>54 THEN 340
360 PN=K-48
```

```
370 PRINT PN
380 PRINT :PRINT "Place your bet: $";
390 INPUT PB
400 PB=INT(PB)
410 IF PB+PM<=25000 THEN 430
420 PRINT "House LIMIT is $25,000. Try again ...":GOTO 390
430 IF PB>0 THEN 460
440 PRINT "You have to bet SOMETHING!";
450 PRINT " Try again ":GOTO 390
460 CN=INT(6*RND(1)+1)
470 IF CN=PN THEN 460
480 PRINT :PRINT "The house calls ";CN
490 POSITION 0,20
500 PRINT "Strike any key to roll the die ..";
510 GET #1,K
520 POSITION 0,20:PRINT CL$
530 FOR K=1 TO 15
540 FOR T=2 TO 0 STEP -1
550 SOUND 0,25*RND(1)+10*T,10,10
560 SOUND 0,0,0,0
570 NEXT T
580 FOR T=0 TO K:NEXT T
590 NEXT K
600 FG=0
610 IF INT(8*RND(1))=0 THEN FG=1
620 IF FG=1 THEN 670
630 DN=INT(6*RND(1))+1
640 IF DN=PN THEN 630
650 IF ABS(DN-CN)>=ABS(DN-PN) THEN 630
660 GOTO 680
670 DN=INT(6*RND(1))+1
680 PRINT CHR$(125);M$
690 PRINT "The die shows ";DN
700 PRINT
710 PRINT "You picked ";PN
720 PRINT
730 PRINT "The house picked ";CN
740 PRINT
750 IF ABS(DN-CN)<ABS(DN-PN) THEN 830
760 PRINT "YOU WIN"
770 FOR K=10 TO 0 STEP -1
780 SOUND 0,K*10+10,10,10
790 NEXT K
800 SOUND 0,0,0,0
810 PM=PM+2*PB
820 GOTO 900
830 PRINT "HOUSE WINS"
840 FOR K=10 TO 50
850 SOUND 0,K,10,10
860 NEXT K
870 SOUND 0,0,0,0
880 PM=PM-PB
890 IF PM<-25000 THEN 1010
900 IF PM>=0 THEN 970
910 POSITION 0,20
920 PRINT "Do you want to play again (Y/N)? ";
```

```
930 GET #1,K
940 IF K=89 OR K=121 THEN 270
950 IF K=78 OR K=110 THEN 1090
960 GOTO 930
970 POSITION 0,20
980 PRINT "Strike any key to play again ...";
990 GET #1,K
1000 GOTO 270
1010 SETCOLOR 2,3,4
1020 SETCOLOR 1,3,14
1030 PRINT CHR$(125);M$
1040 PRINT "Sorry, your debt is on the order of"
1050 PRINT "$25,000."
1060 PRINT :PRINT "We regret that we cannot extend further"
1070 PRINT "credit at this time."
1080 GOTO 1130
1090 PRINT CHR$(125);M$
1100 PRINT "You have a current debt in the amount"
1110 PRINT "shown below:":PRINT
1120 PRINT :PRINT "$";ABS(PM)
1130 POSITION 0,18:PRINT "Strike any key to see options available"
1140 PRINT "for resolving this matter ...";
1150 GET #1,K
1160 GRAPHICS 0:PRINT CHR$(125);M$
1170 PRINT "We cannot accept a check or I.O.U.":PRINT
1180 PRINT "We can accept one, or a combination,"
1190 PRINT "of the following items:":PRINT
1200 POKE 85,5:PRINT "<A> Cash"
1210 POKE 85,5:PRINT "<B> Visa"
1220 POKE 85,5:PRINT "<C> Mastercharge"
1230 POKE 85,5:PRINT "<D> American Express"
1240 PRINT :PRINT
1250 PRINT "NOTE: Cash is paid, or credit cards are"
1260 PRINT "signed over to the owner of this com-"
1270 PRINT "puter."
1280 POSITION 0,20
1290 PRINT "Strike any key ...";
1300 GET #1,K
1310 GRAPHICS 0:POKE 82,2:PRINT CHR$(125)
1320 END
1330 PRINT "Try that again ..."
1340 TRAP 1330
1350 GOTO 256*PEEK(187)+PEEK(186)
```

Program 42 CARDS AT WAR

"Cards were at first for benefits designed, sent to amuse, not to enslave the mind."
—Garrick

```
10 REM ** CARDS AT WAR **
20 REM
30 DIM M$(80),D$(40),K$(1)
40 OPEN #1,4,0,"K:"
```

```
50 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
60 M$(15)="CARDS AT WAR"
70 M$(LEN(M$)+1)=CHR$(155)
80 FOR K=1 TO 40
90 M$(LEN(M$)+1)=CHR$(42)
100 NEXT K
110 POKE 82,0:GRAPHICS 0
120 PRINT CHR$(125);M$
130 POKE 752,0
140 PRINT "Do you want to see the instructions?"
150 PRINT "(Y/N)";
160 GET #1,K
170 IF K=89 OR K=121 THEN 200
180 IF K=78 OR K=110 THEN 380
190 GOTO 160
200 PRINT CHR$(125);M$
210 POKE 752,1
220 FOR N=1 TO 15:READ D$
230 FOR XX=1 TO LEN(D$)
240 CH=ASC(D$(XX))
250 IF CH=37 THEN PRINT ",";:GOTO 280
260 IF CH=36 THEN PRINT :GOTO 280
270 PRINT CHR$(CH);
280 SOUND 0,10,10,10
290 SOUND 0,0,0,0
300 FOR T=1 TO 4:NEXT T
310 NEXT XX
320 PRINT :NEXT N
330 POSITION 0,22
340 POKE 752,0
350 PRINT "Strike the SPACE BAR to begin ...";
360 GOSUB 1500
370 GET #1,K
380 PRINT CHR$(125);M$:PRINT
390 TP=26:TC=26
400 COUNT=0
410 CC=INT(5*RND(1)+1)
420 IF COUNT=1 THEN 450
430 PRINT "There are now ";COUNT;" cards in the stack."
440 GOTO 460
450 PRINT "There is 1 card in the stack."
460 COUNT=COUNT+1
470 IF COUNT+TP<52 AND COUNT+TC<52 THEN 490
480 GOTO 620
490 PRINT :PRINT "Pick a number (1-5):";
500 POKE 752,0
510 GET #1,K
520 IF K<49 OR K>57 THEN 510
530 NB=K-48
540 PRINT NB
550 POKE 752,1
560 FOR SS=25 TO 0 STEP -1
570 SOUND 0,SS,10,10
580 NEXT SS
590 SOUND 0,0,0,0
600 PRINT "The computer picks: ";CC
```

```
610 IF NB<>CC THEN 1100
620 GOSUB 1500
630 PRINT :PRINT
640 PRINT "This is a WAR "
650 GOSUB 1500
660 FOR N=1 TO 6
670 SETCOLOR 1,3,14:SETCOLOR 2,3,2
680 FOR T=1 TO 20:NEXT T
690 SETCOLOR 1,3,2:SETCOLOR 2,3,14
700 FOR T=1 TO 20:NEXT T
710 NEXT N
720 FOR N=1 TO 2:GOSUB 1500:NEXT N
730 PRINT :PRINT "Pick a number (1 or 2) ";
740 GET #1,K
750 IF K<49 OR K>50 THEN 740
760 PC=K-48
770 WC=INT(2*RND(1)+1)
780 GRAPHICS 0:PRINT M$
790 IF WC<>PC THEN 910
800 PRINT CHR$(125);M$
810 FOR N=1 TO 30
820 SOUND 0,10*RND(1)+4,10,12
830 NEXT N
840 SOUND 0,0,0,0
850 PRINT :POKE 85,8
860 PRINT "** YOU WON THE CARDS **"
870 PRINT
880 TP=TP+COUNT:TC=TC-COUNT
890 PRINT "You won ";COUNT;" cards for a total of ";TP;CHR$(46)
900 COUNT=0:GOTO 1020
910 PRINT :POKE 85,2
920 PRINT "** THE COMPUTER GETS THE CARDS **"
930 SOUND 0,150,10,14
940 FOR T=1 TO 80:NEXT T
950 SOUND 0,255,10,14
960 FOR T=1 TO 100:NEXT T
970 SOUND 0,0,0,0
980 TC=TC+COUNT:TP=TP-COUNT
990 PRINT "It won ";COUNT;" cards for a total of ";
1000 PRINT TC;CHR$(46)
1010 COUNT=0
1020 POSITION 0,20
1030 PRINT "Strike the SPACE BAR to continue"
1040 PRINT "(or the X key to quit the game) ...";
1050 GET #1,K
1060 IF K=32 THEN 1110
1070 IF  NOT (K=88 OR K=120) THEN 1050
1080 POKE 82,2:POKE 752,0
1090 GRAPHICS 0:END
1100 FOR T=1 TO 250:NEXT T
1110 PRINT CHR$(125);M$
1120 IF TP>52 THEN 1150
1130 IF TC>52 THEN 1280
1140 GOTO 410
1150 FOR N=1 TO 4
1160 FOR SS=14 TO 2 STEP -2
```

```
1170 SOUND 0,80,10,SS
1180 NEXT SS:NEXT N
1190 SOUND 0,0,0,0
1200 PRINT "YOU HAVE WON THE GAME"
1210 PRINT :POKE 752,0
1220 PRINT "Would you like to play again (Y/N)? ";
1230 GET #1,K
1240 IF K=89 OR K=121 THEN 380
1250 IF  NOT (K=78 OR K=110) THEN 1230
1260 POKE 82,2:POKE 752,0
1270 GRAPHICS 0:END
1280 FOR SS=1 TO 50
1290 SOUND 0,SS,10,10
1300 FOR NS=1 TO 5:NEXT NS
1310 NEXT SS
1320 SOUND 0,0,0,0
1330 PRINT :PRINT "THE COMPUTER WON THE GAME"
1340 GOTO 1210
1350 DATA You and your computer are about to play
1360 DATA a variation of a popular card game
1370 DATA called 'WAR.'$
1380 DATA You and the computer both begin with
1390 DATA hands of 26 cards. You both pick a
1400 DATA number between 1 and 5; and if the
1410 DATA numbers do not match% you both place
1420 DATA one card into the pot. But if the
1430 DATA numbers match% you go to 'WAR.'
1440 DATA $Going to 'WAR' means that you pick a
1450 DATA number% 1 or 2. If you select the right
1460 DATA number% YOU get the cards from the pot.
1470 DATA Otherwise% the COMPUTER gets them.$
1480 DATA The first to get all 52 cards WINS"
1490 DATA the game.
1500 FOR SS=16 TO 2 STEP -2
1510 SOUND 0,100,10,SS
1520 SOUND 1,255,10,SS
1530 FOR NS=1 TO 5:NEXT NS
1540 NEXT SS
1550 SOUND 0,0,0,0
1560 SOUND 1,0,0,0
1570 RETURN
```

Program 43 FLASH CARDS

"Think fast!"

—Twentieth-Century American figure of speech

```
10 REM ** COMPUTER FLASH CARDS **
20 REM
30 DIM A$(20)
40 DIM M$(80),D$(40),F1$(20),F2$(40)
50 OPEN #1,4,0,"K:"
```

```
60 POKE 82,0:GRAPHICS 0
70 FOR K=1 TO 10:M$(K)=CHR$(32):NEXT K
80 M$(11)="RED-HOT FLASH CARDS"
90 M$(LEN(M$)+1)=CHR$(155)
100 FOR K=1 TO 40
110 M$(LEN(M$)+1)=CHR$(61)
120 F2$(K)=CHR$(32)
130 NEXT K
140 F1$="FLASH CARDS"
150 F2$=F2$(1,15)
160 A$="ANSWER: "
170 PRINT CHR$(125);M$
180 POKE 752,1
190 FOR N=1 TO 6:READ D$
200 FOR CX=1 TO LEN(D$)
210 IF D$(CX,CX)="$" THEN PRINT :GOTO 240
220 SOUND 0,10,10,10
230 PRINT D$(CX,CX);
240 FOR T=1 TO 20:NEXT T
250 SOUND 0,0,0,0
260 NEXT CX:PRINT :NEXT N
270 DATA The dawn of the computer age sheds new
280 DATA light on the need for people to think
290 DATA and react faster than ever before. This
300 DATA need extends to some older educational
310 DATA techniques.$
320 DATA Here is an example --
330 FOR N=1 TO 4:FOR SS=50 TO 10 STEP -2
340 SOUND 0,SS,10,10
350 NEXT SS
360 NEXT N
370 SOUND 0,0,0,0
380 FOR T=1 TO 50
390 POSITION 13,12
400 IF INT(T/5)/2=INT(INT(T/5)/2) THEN PRINT F1$;:GOTO 420
410 PRINT F2$;
420 NEXT T
430 POSITION 0,20
440 POKE 752,0
450 PRINT "Strike any key to begin ... ";
460 GET #1,K
470 SETCOLOR 1,3,2:SETCOLOR 2,3,14
480 PRINT CHR$(125);M$
490 POSITION 2,10
500 FOR N=1 TO LEN(A$)
510 AX=ASC(A$(N))
520 PRINT CHR$(AX+128);
530 NEXT N
540 FOR N=1 TO 50
550 F=INT(4*RND(1)+1)
560 A=INT(11*RND(1))
570 B=INT(11*RND(1))
580 IF F<4 THEN 610
590 IF B=0 AND F=4 THEN 570
600 IF A/B<>INT(A/B) THEN 570
610 POSITION 2,8
```

```
620 SOUND 0,20,10,10
630 SOUND 0,0,0,0
640 ON F GOSUB 950,970,990,1010
650 FOR T=1 TO 25:NEXT T
660 PRINT "?";M$(1,4);
670 POKE 752,1
680 POSITION 22,18
690 PRINT "Card No. ";N
700 POKE 752,0
710 NEXT N
720 GRAPHICS 0:PRINT M$
730 PRINT "You got ";U;" correct out of ";N-1;CHR$(46)
740 FOR SS=100 TO 10 STEP -2
750 SOUND 0,SS,10,10
760 NEXT SS
770 FOR SS=10 TO 100 STEP 2
780 SOUND 0,SS,10,10
790 NEXT SS
800 SOUND 0,0,0,0
810 PRINT
820 FOR N=1 TO 10
830 READ D:PRINT CHR$(D);
840 NEXT N
850 PRINT :PRINT
860 FOR N=1 TO 4
870 READ D$:POKE 85,5:PRINT D$;" Grade"
880 NEXT N
890 POSITION 0,20
900 PRINT "Strike the RETURN key ...";
910 POKE 754,255
920 IF PEEK(754)=255 THEN 920
930 POKE 82,2:GRAPHICS 0
940 END
950 PRINT A;"+";B;"= ";
960 C=A+B:RETURN
970 PRINT A;"-";B;"= ";
980 C=A-B:RETURN
990 PRINT A;"x";B;"= ";
1000 C=A*B:RETURN
1010 PRINT A;"/";B;"= ";
1020 C=A/B:RETURN
1030 DATA 89,79,85,32,70,76,85,78,75,58
1040 DATA FIRST,SECOND,THIRD,FOURTH
```

Program 44 BLACKJACK

"I must complain the cards are ill shuffled till I have a good hand."

—Swift

```
10 REM ** BLACKJACK **
20 REM
30 DIM M$(80),B$(40),D(40),P(40)
```

```
40 OPEN #1,4,0,"K:":POKE 82,0
50 FOR N=1 TO 14:M$(N)=CHR$(32):NEXT N
60 M$(15)="BLACKJACK":M$(24)=CHR$(155)
70 FOR N=1 TO 40
80 M$(24+N)="=":B$(N)="="
90 NEXT N
100 GRAPHICS 0:PRINT M$
110 SETCOLOR 1,0,15:SETCOLOR 2,8,2:SETCOLOR 4,3,4
120 PRINT "THIS GAME IS AN APPROXIMATION OF THE"
130 PRINT "POPULAR CARD GAME KNOWN AS 'BLACKJACK.'"
140 PRINT
150 PRINT :PRINT "YOU AND THE DEALER (THE COMPUTER) DRAW"
160 PRINT "CARDS IN AN ATTEMPT TO COMPILE A SUM"
170 PRINT "THAT APPROCHES, BUT DOES NOT EXCEED,"
180 PRINT "21. (EXCEEDING 21 IS A 'BUST' -- YOU"
190 PRINT "AUTOMATICALLY LOSE THE ROUND.)"
200 POSITION 0,20
210 POSITION 0,21:PRINT "STRIKE ANY KEY TO BEGIN ...";
220 GET #1,K
230 PRINT CHR$(125);M$
240 DT=0
250 FOR N=1 TO INT(2*RND(1))+3
260 D(N)=INT(2*RND(1))+3
270 DT=DT+D(N)
280 NEXT N
290 DN=N-1
300 POSITION 0,4
310 PRINT "THE DEALER HAS ";DN;" CARDS, AND THE"
320 PRINT "TOP CARD IS ";D(1);"."
330 PRINT B$
340 FOR N=1 TO 2
350 P(N)=INT(12*RND(1))+2
360 NEXT N
370 PN=N-1
380 PT=0
390 POSITION 0,8
400 PRINT "YOUR CURRENT HAND LOOKS LIKE THIS:"
410 POSITION 0,10
420 FOR N=1 TO PN
430 PRINT P(N);M$(1,3);
440 PT=PT+P(N)
450 NEXT N
460 IF PT>21 THEN 630
470 POSITION 0,12
480 PRINT "WANT ANOTHER CARD (Y/N)? ";
490 GET #1,K
500 IF  NOT (K=89 OR K=121) THEN 530
510 PN=PN+1:P(N)=INT(12*RND(1))+2
520 GOTO 380
530 POKE 752,1
540 IF  NOT (K=78 OR K=110) THEN 490
550 POSITION 0,14:PRINT B$
560 POSITION 0,16
570 PRINT "YOU HAVE ";PT;"."
580 PRINT "DEALER HAS ";DT;"."
590 IF DT>21 THEN GOTO 700
```

```
600 IF DT=PT THEN GOTO 790
610 IF ABS(21-DT)<ABS(21-PT) THEN 790
620 GOTO 700
630 POSITION 13,14
640 PRINT "** BUSTED **"
650 FOR N=10 TO 60
660 SOUND 0,N,10,N
670 NEXT N
680 SOUND 0,0,0,0
690 GOTO 790
700 POSITION 12,19
710 PRINT "** YOU WIN **"
720 FOR N=1 TO 4
730 FOR SS=50 TO 10 STEP -1
740 SOUND 0,SS,10,10
750 NEXT SS
760 SOUND 0,0,0,0
770 NEXT N
780 GOTO 850
790 POSITION 11,19
800 PRINT "** DEALER WINS **"
810 FOR N=10 TO 100
820 SOUND 0,N,10,N/10
830 NEXT N
840 SOUND 0,0,0,0
850 POSITION 0,22
860 POKE 752,0
870 PRINT "WANT TO PLAY ANOTHER HAND (Y/N)? ";
880 GET #1,K
890 IF K=89 OR K=121 THEN 230
900 IF  NOT (K=78 OR K=110) THEN 880
910 GRAPHICS 0:POKE 82,2:POKE 752,0
920 END
```

Program 45 FAIR BLACKJACK

"I always sit with mah back to tha wall. Thataways I can see whosa commin' through tha door."
—Line from the 1958 western film, *Billy's Brothers Make Snake Creek Look Bad.*

It's tough to beat the house with this one.

```
10 REM ** FAIR BLACKJACK **
20 REM
30 DIM D(5),P(13)
40 DIM M$(80),B$(40)
50 OPEN #1,4,0,"K:"
60 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
70 M$(15)="BLACKJACK"
80 M$(LEN(M$)+1)=CHR$(155)
90 FOR K=1 TO 39
```

```
100 M$(LEN(M$)+1)=CHR$(61):B$(K)=CHR$(32)
110 NEXT K
120 POKE 82,0:GRAPHICS 0
130 PRINT CHR$(125);M$
140 PRINT "This game is an approximation of the"
150 PRINT "popular card game known as 'BLACKJACK.'"
160 PRINT
170 PRINT "You and the dealer (the computer) draw"
180 PRINT "cards in an attempt to compile a sum"
190 PRINT "that approaches, but does not exceed,"
200 PRINT "21. (Exceeding 21 is a 'BUST' -- You"
210 PRINT "automatically lose the round.)"
220 POSITION 0,20
230 PRINT "Strike any key to begin ...";
240 GET #1,K
250 SETCOLOR 1,9,14:SETCOLOR 2,9,2
260 SETCOLOR 4,4,2
270 PRINT CHR$(125);M$
280 DT=0
290 FOR N=1 TO INT(2*RND(1)+3)
300 D(N)=INT(12*RND(1)+2)
310 DT=DT+D(N)
320 NEXT N
330 DN=N-1
340 POSITION 0,4
350 PRINT "The dealer has ";DN;" cards, and the"
360 PRINT "top card is ";D(1)
370 FOR N=1 TO 2
380 P(N)=INT(12*RND(1)+2)
390 NEXT N
400 PN=N-1
410 PT=0
420 POSITION 0,8
430 PRINT "Your current hand looks like this:"
440 POSITION 0,10
450 FOR N=1 TO PN
460 PRINT P(N);CHR$(32);
470 PT=PT+P(N)
480 NEXT N
490 IF PT>21 THEN 780
500 POSITION 0,12:PRINT B$:POSITION 0,12
510 POKE 752,0
520 PRINT "Want another card (Y/N)? ";
530 GET #1,K
540 POKE 752,1
550 IF  NOT (K=89 OR K=121) THEN 580
560 PN=PN+1:P(PN)=INT(12*RND(1)+2)
570 GOTO 410
580 IF  NOT (K=78 OR K=110) THEN 530
590 POSITION 0,12
600 PRINT "Please wait ...";
610 PRINT B$(39-PEEK(85));
620 IF PT=21 OR INT(4*RND(1))=1 THEN 700
630 IF DT<=21 AND ABS(21-DT)<ABS(21-PT) THEN 700
640 DT=D(1)
650 FOR N=2 TO DN
```

```
660 D(N)=INT(12*RND(1)+2)
670 DT=DT+D(N)
680 NEXT N
690 GOTO 630
700 POSITION 0,14:PRINT B$
710 POSITION 0,16
720 PRINT "You have ";PT
730 PRINT "Dealer has ";DT
740 IF DT>21 THEN 850
750 IF DT=PT THEN 930
760 IF ABS(21-DT)<ABS(21-PT) THEN 930
770 GOTO 850
780 POSITION 0,12:PRINT B$;
790 POSITION 13,12
800 PRINT "** BUSTED **"
810 FOR SS=1 TO 100 STEP 2
820 SOUND 0,SS,10,10
830 NEXT SS:SOUND 0,0,0,0
840 GOTO 930
850 POSITION 13,19:POKE 752,1
860 PRINT "** YOU WIN **"
870 FOR SS=1 TO 4
880 FOR SN=100 TO 50 STEP -2
890 SOUND 0,SN,10,10
900 NEXT SN:NEXT SS
910 SOUND 0,0,0,0
920 GOTO 1000
930 POSITION 11,19:POKE 752,1
940 PRINT "** DEALER WINS **"
950 FOR SS=16 TO 1 STEP -2
960 SOUND 0,100,8,SS
970 FOR NS=1 TO 10:NEXT NS
980 NEXT SS
990 SOUND 0,0,0,0
1000 POSITION 0,21:POKE 752,0
1010 PRINT "Want to play another hand (Y/N)? ";
1020 GET #1,K
1030 IF K=89 OR K=121 THEN 270
1040 IF  NOT (K=78 OR K=110) THEN 1020
1050 POKE 82,2:POKE 752,0
1060 GRAPHICS 0:END
```

Program 46 PRESIDENTS QUIZ

"The buck stops here."

—President Harry S. Truman

This is a legitimate self-teaching program. No kidding—it really is.

```
10 REM ** U.S. PRESIDENTS QUIZ **
20 REM
30 OPEN #1,4,0,"K:"
```

```
40 DIM M$(80),A1$(40),A2$(40),A3$(40)
50 DIM A4$(40),A5$(20),A(5)
60 FOR K=1 TO 10:M$(K)=CHR$(32):NEXT K
70 M$(11)="U.S. PRESIDENTS QUIZ"
80 M$(LEN(M$)+1)=CHR$(155)
90 FOR K=1 TO 40
100 M$(LEN(M$)+1)=CHR$(42)
110 NEXT K
120 POKE 82,0:GRAPHICS 0
130 SETCOLOR 1,3,2:SETCOLOR 2,3,14
140 PRINT CHR$(125);M$
150 POKE 752,1
160 PRINT :PRINT "PLEASE WAIT ..."
170 RESTORE
180 FOR N=1 TO INT(39*RND(1)+1)
190 READ Y,A1$
200 NEXT N
210 READ Y,A2$
220 RESTORE
230 FOR N=1 TO INT(39*RND(1)+1)
240 READ Y,A3$
250 NEXT N
260 IF A3$=A1$ OR A3$=A2$ THEN 220
270 RESTORE
280 FOR N=1 TO INT(39*RND(1)+1)
290 READ Y,A4$
300 NEXT N
310 IF A4$=A1$ OR A4$=A2$ OR A4$=A3$ THEN 270
320 A5$="NONE OF THE ABOVE"
330 PRINT CHR$(125);M$
340 PRINT "Which one immediately succeeded"
350 PRINT "President ";A1$;"?"
360 PRINT
370 FOR N=1 TO 3
380 X=INT(3*RND(1)+1)
390 A(N)=X
400 IF N=1 THEN 440
410 FOR CX=1 TO N-1
420 IF A(N)=A(CX) THEN 380
430 NEXT CX
440 NEXT N
450 FOR N=1 TO 3
460 POKE 85,5:PRINT N;" -- ";
470 ON A(N) GOTO 480,490,500
480 PRINT A2$:CA=N:GOTO 510
490 PRINT A3$:GOTO 510
500 PRINT A4$:GOTO 510
510 NEXT N
520 POKE 85,5:PRINT "4 -- ";A5$
530 POSITION 2,12
540 POKE 752,0:PRINT "?";
550 GET #1,K
560 NG=NG+1
570 IF K<49 OR K>53 THEN 550
580 POSITION 4,12
590 PRINT CHR$(K)
```

```
600 K=K-48
610 IF K=CA THEN 680
620 PRINT "That is incorrect."
630 GOSUB 700
640 PRINT CHR$(125);M$
650 POKE 752,1
660 PRINT :PRINT "PLEASE WAIT ..."
670 GOTO 270
680 PRINT "That is correct."
690 NC=NC+1:GOSUB 700:GOTO 140
700 POSITION 4,16
710 S=INT(100*NC/NG)
720 PRINT "You have ";NC;" correct out of ";NG
730 PRINT
740 POKE 85,10
750 PRINT "for a score of ";S;"%"
760 POSITION 0,20
770 PRINT "Strike the SPACE BAR to continue"
780 PRINT "(or the X key to end this quiz) ...";
790 GET #1,K
800 IF K=32 THEN RETURN
810 IF  NOT (K=88 OR K=120) THEN 790
820 POKE 82,2:GRAPHICS 0
830 END
840 REM
850 DATA 1,GEORGE WASHINGTON
860 DATA 2,JOHN ADAMS
870 DATA 3,THOMAS JEFFERSON
880 DATA 4,JAMES MADISON
890 DATA 5,JAMES MONROE
900 DATA 6,JOHN QUINCY ADAMS
910 DATA 7,ANDREW JOHNSON
920 DATA 8,MARTIN VAN BUREN
930 DATA 9,WILLIAM H. HARRISON
940 DATA 10,JOHN TYLER
950 DATA 11,JAMES K. POLK
960 DATA 12,ZACHARY TAYLOR
970 DATA 13,MILLARD FILLMORE
980 DATA 14,FRANKLIN PIERCE
990 DATA 15,JAMES BUCHANAN
1000 DATA 16,ABRAHAM LINCOLN
1010 DATA 17,ANDREW JACKSON
1020 DATA 18,ULYSSES S. GRANT
1030 DATA 19,RUTHERFORD B. HAYES
1040 DATA 20,JAMES A. GARFIELD
1050 DATA 21,CHESTER A. ARTHUR
1060 DATA 22,GROVER CLEVELAND
1070 DATA 23,BENJAMIN HARRISON
1080 DATA 24,GROVER CLEVELAND
1090 DATA 25,WILLIAM McKINLEY
1100 DATA 26,THEODORE ROOSEVELT
1110 DATA 27,WILLIAM H. TAFT
1120 DATA 28,WOODROW WILSON
1130 DATA 29,WARREN G. HARDING
1140 DATA 30,CALVIN COOLIDGE
1150 DATA 31,HERBERT C. HOOVER
```

```
1160 DATA 32,FRANKLIN D. ROOSEVELT
1170 DATA 33,HARRY S. TRUMAN
1180 DATA 34,DWIGHT D. EISENHOWER
1190 DATA 35,JOHN F. KENNEDY
1200 DATA 36,LYNDON B. JOHNSON
1210 DATA 37,RICHARD M. NIXON
1220 DATA 38,GERALD R. FORD
1230 DATA 39,JIMMY CARTER
1240 DATA 40,RONALD REAGAN
```

Program 47 STATES, CITIES, AND CAPITALS

"We pray for our leaders until we actually see them at work. Then we pray for our nation."

—Anonymous

This is an honest-to-goodness good program, too. Believe me—really, it is for sure.

```
10 REM ** STATES, CAPITALS AND CITIES **
20 REM
30 DIM A$(40),B$(40),C$(40),D$(40)
40 DIM E$(40),M$(80),Q$(256),TB$(10)
50 DIM X(4)
60 OPEN #1,4,0,"K:"
70 M$="NAME THE CAPITAL"
80 M$(LEN(M$)+1)=CHR$(155)
90 FOR K=1 TO 40:A$(K)=CHR$(42):NEXT K
100 M$(LEN(M$)+1)=A$
110 GRAPHICS 0:POKE 82,0
120 POKE 752,1
130 PRINT CHR$(125);M$
140 PRINT :PRINT "PLEASE WAIT A MOMENT ..."
150 RESTORE
160 Y=INT(50*RND(1)+1)
170 FOR K=1 TO 10:TB$(K)=CHR$(32):NEXT K
180 FOR X=1 TO Y
190 READ Z,A$,B$,C$,D$
200 NEXT X
210 RESTORE
220 FOR X=1 TO INT(250*RND(1)+1)
230 READ E$
240 NEXT X
250 IF ASC(E$)<65 THEN 210
260 IF E$=A$ OR E$=B$ OR E$=C$ OR E$=D$ THEN 210
270 FOR N=1 TO 4
280 X(N)=INT(4*RND(1)+1)
290 IF N=1 THEN 330
300 FOR Y=1 TO N-1
310 IF X(Y)=X(N) THEN 280
320 NEXT Y
330 NEXT N
340 FOR N=1 TO 4
350 Q$(LEN(Q$)+1)=TB$
```

```
360 Q$(LEN(Q$)+1)=CHR$(N+64)
370 Q$(LEN(Q$)+1)=". "
380 ON X(N) GOTO 390,400,410,420
390 CA=N+64:Q$(LEN(Q$)+1)=B$:GOTO 430
400 Q$(LEN(Q$)+1)=C$:GOTO 430
410 Q$(LEN(Q$)+1)=D$:GOTO 430
420 Q$(LEN(Q$)+1)=E$
430 Q$(LEN(Q$)+1)=CHR$(155)
440 NEXT N
450 Q$(LEN(Q$)+1)=TB$
460 Q$(LEN(Q$)+1)="E. NONE OF THE ABOVE"
470 PRINT CHR$(125);M$
480 PRINT "WHICH ONE OF THE FOLLOWING IS THE"
490 PRINT "CAPITAL OF";CHR$(32);A$;":"
500 PRINT
510 PRINT Q$
520 FOR SS=1 TO 2:GOSUB 850
530 FOR TT=1 TO 50:NEXT TT
540 NEXT SS
550 Q$=""
560 POKE 752,0
570 PRINT :PRINT "?";
580 GET #1,K
590 IF K<65 OR K>69 THEN 580
600 PRINT CHR$(32);CHR$(K);"--";
610 NT=NT+1
620 POKE 85,5
630 IF K=CA THEN 690
640 PRINT "SORRY, THAT IS NOT CORRECT."
650 GOSUB 720
660 POKE 752,1:PRINT CHR$(125);M$
670 PRINT :PRINT "PLEASE WAIT A MOMENT ..."
680 GOTO 210
690 PRINT "THAT IS CORRECT."
700 GOSUB 850
710 NC=NC+1:GOSUB 720:GOTO 120
720 POSITION 8,16
730 SC=INT(100*NC/NT)
740 PRINT NC;" CORRECT OUT OF ";NT
750 POKE 85,8
760 PRINT "FOR A SCORE OF ";SC;"%."
770 POSITION 0,20
780 PRINT "STRIKE THE SPACE BAR TO CONTINUE"
790 PRINT "(OR THE X KEY TO END THE QUIZ)... ";
800 GET #1,K
810 IF K=32 THEN RETURN
820 IF  NOT (K=88 OR K=120) THEN 800
830 GRAPHICS 0:PRINT CHR$(125):POKE 82,2
840 END
850 FOR T=15 TO 1 STEP -1
860 SOUND 0,50,10,T
870 NEXT T
880 SOUND 0,0,0,0
890 RETURN
900 DATA 1,ALABAMA,MONTGOMERY,BIRMINGHAM,MOBILE
910 DATA 2,ALASKA,JUNEAU,ANCHORAGE,FAIRBANKS
920 DATA 3,ARIZONA,PHOENIX,TUCSON,FLAGSTAFF
```

```
930 DATA 4,ARKANSAS,LITTLE ROCK,EL DORADO,FORT SMITH
940 DATA 5,CALIFORNIA,SACRAMENTO,LOS ANGELES,SAN FRANCISCO
950 DATA 6,COLORADO,DENVER,COLORADO SPRINGS,PUEBLO
960 DATA 7,CONNECTICUT,HARTFORD,BRIDGEPORT,WATERBURY
970 DATA 8,DELAWARE,DOVER,MILFORD,NEW CASTLE
980 DATA 9,FLORIDA,TALLAHASSEE,JACKSONVILLE,MIAMI
990 DATA 10,GEORGIA,ATLANTA,MACON,SAVANNAH
1000 DATA 11,HAWAII,HONOLULU,WAIPAHU,KANEOHE
1010 DATA 12,IDAHO,BOISE,POCATELLO,IDAHO FALLS
1020 DATA 13,ILLINOIS,SPRINGFIELD,CHICAGO,PEORIA
1030 DATA 14,INDIANA,INDIANAPOLIS,FORT WAYNE,SOUTH BEND
1040 DATA 15,IOWA,DES MOINES,CEDAR RAPIDS,SIOUX CITY
1050 DATA 16,KANSAS,TOPEKA,KANSAS CITY,WICHITA
1060 DATA 17,KENTUCKY,FRANKFORT,LOUISVILLE,LEXINGTON
1070 DATA 18,LOUISIANA,BATON ROUGE,NEW ORLEANS,SHREVEPORT
1080 DATA 19,MAINE,AUGUSTA,PORTLAND,BRUNSWICK
1090 DATA 20,MARYLAND,ANNAPOLIS,BALTIMORE,SILVER SPRINGS
1100 DATA 21,MASSACHUSETTS,BOSTON,NEW BEDFORD,SPRINGFIELD
1110 DATA 22,MICHIGAN,LANSING,DETROIT,GRAND RAPIDS
1120 DATA 23,MINNESOTA,ST. PAUL,MINNEAPOLIS,ROCHESTER
1130 DATA 24,MISSISSIPPI,JACKSON,MERIDIAN,HATTIESBURG
1140 DATA 25,MISSOURI,JEFFERSON CITY,ST. LOUIS,SPRINGFIELD
1150 DATA 26,MONTANA,HELENA,BILLINGS,GREAT FALLS
1160 DATA 27,NEBRASKA,LINCOLN,OMAHA,HASTINGS
1170 DATA 28,NEVADA,CARSON CITY,LAS VEGAS,RENO
1180 DATA 29,NEW HAMPSHIRE,CONCORD,MANCHESTER,CLAREMONT
1190 DATA 30,NEW JERSEY,TRENTON,NEWARK,ATLANTIC CITY
1200 DATA 31,NEW MEXICO,SANTE FE,ALBUQUERQUE,ALAMOGORDA
1210 DATA 32,NEW YORK,ALBANY,NEW YORK,SYRACUSE
1220 DATA 33,NORTH CAROLINA,RALEIGH,CHARLOTTE,WINSTON-SALEM
1230 DATA 34,NORTH DAKOTA,BISMARCK,FARGO,MINOT
1240 DATA 35,OHIO,COLUMBUS,CLEVELAND,CINCINNATI
1250 DATA 36,OKLAHOMA,OKLAHOMA CITY,TULSA,MUSKOGEE
1260 DATA 37,OREGON,SALEM,PORTLAND,EUGENE
1270 DATA 38,PENNSYLVANIA,HARRISBURG,PHILADELPHIA,PITTSBURGH
1280 DATA 39,RHODE ISLAND,PROVIDENCE,NEWPORT,WARWICK
1290 DATA 40,SOUTH CAROLINA,COLUMBIA,AUGUSTA,CHARLESTON
1300 DATA 41,SOUTH DAKOTA,PIERRE,SIOUX FALLS,RAPID CITY
1310 DATA 42,TENNESSEE,NASHVILLE,MEMPHIS,KNOXVILLE
1320 DATA 43,TEXAS,AUSTIN,HOUSTON,DALLAS
1330 DATA 44,UTAH,SALT LAKE CITY,PROVO,OGDEN
1340 DATA 45,VERMONT,MONTPELIER,BURLINGTON,RUTLAND
1350 DATA 46,VIRGINIA,RICHMOND,NORFOLK,VIRGINIA BEACH
1360 DATA 47,WASHINGTON,OLYMPIA,SEATTLE,SPOKANE
1370 DATA 48,WEST VIRGINIA,CHARLESTON,HUNTINGTON,PARKERSBURG
1380 DATA 49,WISCONSIN,MADISON,MILWAUKEE,GREEN BAY
1390 DATA 50,WYOMING,CHEYENNE,LARAMIE,CASPER
```

Program 48 DRAW

"Art is the highest form of flattery."

—Overheard in a reducing salon in Miami Beach

```
10 REM ** DRAW PICTURES **
20 REM
30 POKE 82,0
40 DIM M$(80)
50 OPEN #1,4,0,"K:"
60 GRAPHICS 3
70 POSITION 8,8
80 PRINT "SEE WHAT YOU CAN DRAW"
90 POSITION 0,21
100 PRINT "STRIKE ANY KEY TO BEGIN ...";
110 GET #1,K
120 PRINT CHR$(125)
130 FOR K=1 TO 40:PRINT "-";:NEXT K
140 POKE 766,1:POKE 752,1
150 PRINT CHR$(28);" -UP";:POKE 657,11
160 PRINT CHR$(29);" -DOWN";:POKE 657,24
170 PRINT "C -CHANGE COLOR"
180 PRINT CHR$(30);" -LEFT";:POKE 657,11
190 PRINT CHR$(31);" -RIGHT";:POKE 657,24
200 PRINT "X -END PROGRAM"
210 COLOR 1
220 X=10:Y=10
230 PLOT X,Y
240 GET #1,K
250 IF K=ASC("X") THEN GOTO 380
260 IF K<>ASC("C") THEN GOTO 290
270 CL=CL+1:IF CL=15 THEN CL=0
280 COLOR CL
290 IF K=ASC("-") THEN Y=Y-1
300 IF K=ASC("=") THEN Y=Y+1
310 IF K=ASC("+") THEN X=X-1
320 IF K=ASC("*") THEN X=X+1
330 IF Y<0 THEN Y=0
340 IF Y>19 THEN Y=19
350 IF X<0 THEN X=0
360 IF X>39 THEN X=39
370 GOTO 230
380 GRAPHICS 0:POKE 82,2:END
```

Program 49 MASTERPIECE ART

"Modern art is what happens when painters stop looking at girls and persuade themselves they have a better idea."

—John Ciardi

```
10 DIM M$(80),C$(40)
20 FOR K=1 TO 12:M$(K)=CHR$(32):NEXT K
30 M$(13)="MASTERPICE ART":M$(27)=CHR$(155)
40 FOR K=1 TO 36:M$(27+K)=CHR$(5):NEXT K
```

```
50 OPEN #1,4,0,"K:"
60 GRAPHICS 0:PRINT CHR$(125);M$
70 PRINT "This is a very sophisticated pro-"
80 PRINT "gram that gives ordinary computers"
90 PRINT "the power to generate masterpieces of"
100 PRINT "art that rival those of the old mas-"
110 PRINT "ters of the past."
120 POSITION 2,18
130 PRINT "Strike any key to see this wonderful"
140 PRINT "technique working before your very"
150 PRINT "eyes ...";
160 POKE 564,255:GET #1,K
170 GRAPHICS 3
180 POKE 752,1
190 PRINT CHR$(125);M$
200 GOSUB 510
210 SETCOLOR 4,0,0
220 FOR COL=0 TO 39:FOR ROW=0 TO 19
230 COLOR INT(3*RND(1)+1)
240 PLOT COL,ROW
250 NEXT ROW:NEXT COL
260 RESTORE
270 FOR N=1 TO INT(7*RND(1)+1)
280 READ C$
290 NEXT N
300 PRINT CHR$(125)
310 PRINT "SEE THE ";C$;"?"
320 FOR N=1 TO 2:FOR SS=14 TO 0 STEP -2
330 SOUND 0,20,10,SS:SOUND 1,130,10,SS
340 FOR SD=1 TO 30:NEXT SD
350 NEXT SS
360 NEXT N
370 SOUND 0,0,0,0:SOUND 1,0,0,0
380 FOR N=1 TO 6:GOSUB 510
390 FOR T=1 TO 200:NEXT T
400 NEXT N
410 FOR SS=20 TO 0 STEP -1
420 SOUND 0,SS,10,10
430 NEXT SS
440 SOUND 0,0,0,0
450 POKE 752,0
460 PRINT "Strike the SPACE BAR to see another"
470 PRINT "picture, or any other key to end ...";
480 POKE 764,255:GET #1,K
490 IF K=32 THEN GRAPHICS 0:GOTO 170
500 GRAPHICS 0:END
510 SETCOLOR 0,INT(15*RND(1)+2),2
520 SETCOLOR 1,INT(15*RND(1)+1),14
530 SETCOLOR 2,INT(15*RND(1)+2),2
540 RETURN
550 DATA DOGGIE,PRETTY LADY,KITTY CAT
560 DATA CLOWN,MESSY BEDROOM,TASTY PIZZA
570 DATA BEAUTIFUL MOUNTAINS,DEER BY THE CREEK
```

Program 50 WEATHER PREDICTOR

"Ditto, ditto, ditto . . ."

—Weather announcer in San Francisco

```
10 REM ** WEATHER FORECASTER **
20 REM
30 DIM M$(80),Y$(40),TT$(20),PP$(20),K$(5)
40 DIM TP$(20),YP$(20),DP$(20),XX$(10)
50 FOR K=1 TO 36:Y$(K)=CHR$(37):NEXT K
60 FOR K=1 TO 11:M$(K)=CHR$(32):NEXT K
70 M$(12)="WEATHER FORECASTER"
80 M$(30)=CHR$(155):M$(31)=Y$
90 TT$="Temperature: "
100 PP$="Precipitation (Y/N): "
110 OPEN #1,4,0,"K:"
120 GRAPHICS 0
130 SETCOLOR 1,8,14:SETCOLOR 2,8,0
140 SETCOLOR 4,3,0
150 PRINT CHR$(125);M$
160 PRINT "This is a weather forecasting pro-"
170 PRINT "gram that is so accurate that it"
180 PRINT "will put some local weatherpersons"
190 PRINT "out of work.":PRINT
200 PRINT "The program requests some weather"
210 PRINT "data for the past three days --"
220 PRINT "make sure than you have the infor-"
230 PRINT "mation at hand before starting."
240 PRINT
250 PRINT "If you supply the correct sort of"
260 PRINT "data, the computer will predict"
270 PRINT "the weather for your area."
280 POSITION 2,21
290 PRINT "Strike any key to begin ...";
300 GOSUB 800
310 POKE 764,255:GET #1,K
320 PRINT CHR$(125);M$
330 PRINT
340 PRINT "Enter today's weather summary:"
350 PRINT
360 POKE 85,7:PRINT TT$;
370 GOSUB 870:TT=XX
380 GOSUB 740:TP$=K$
390 PRINT CHR$(125);M$
400 PRINT
410 PRINT "Enter yesterday's weather summary:"
420 PRINT
430 POKE 85,7:PRINT TT$;
440 GOSUB 870:YT=XX
450 GOSUB 740:YP$=K$
460 PRINT CHR$(125);M$
470 PRINT
480 PRINT "Enter summary for the day before"
```

```
490 PRINT "yesterday:"
500 PRINT
510 POKE 85,7:PRINT TT$;
520 GOSUB 870:DT=XX
530 GOSUB 740:DP$=K$
540 PRINT CHR$(125);M$
550 FT=(3*TT+2*YT+DT)/6
560 CP=0
570 IF TP$="Y" THEN CP=CP+50
580 IF YP$="Y" THEN CP=CP+25
590 IF DP$="Y" THEN CP=CP+13
600 CP=ABS(10*RND(1)-5+CP)
610 PRINT "Weather summary for the next two days:"
620 PRINT :GOSUB 800
630 PRINT :POKE 85,7:PRINT TT$
640 PRINT :POKE 85,12:PRINT FT;" degrees"
650 PRINT :POKE 85,7
660 PRINT "Chance of precipitation:"
670 PRINT :POKE 85,12:PRINT CP;" percent"
680 POSITION 2,20
690 PRINT "THAT'S ALL, FOLKS"
700 FOR N=1 TO 3:GOSUB 800:NEXT N
710 PRINT "Strike any key ...";
720 POKE 764,255:GET #1,K
730 GRAPHICS 0:END
740 POKE 85,7:PRINT PP$;
750 POKE 764,255:GET #1,K
760 IF K>90 THEN K=K-32
770 K$=CHR$(K)
780 IF K$="Y" OR K$="N" THEN RETURN
790 GOTO 750
800 FOR SS=14 TO 0 STEP -2
810 SOUND 0,20,10,SS
820 SOUND 1,38,10,SS
830 FOR SD=1 TO 20:NEXT SD
840 NEXT SS
850 SOUND 0,0,0,0:SOUND 1,0,0,0
860 RETURN
870 INPUT XX$
880 FOR NX=1 TO LEN(XX$)
890 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 920
900 IF XX$(NX,NX)="-" THEN 920
910 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 870
920 NEXT NX
930 XX=VAL(XX$)
940 RETURN
```

Program 51 CRYSTAL BALL

If someone gives you so-called good advice, do the opposite; you can be sure it will be the right thing nine out of ten times.

—Anselm Feuerbach

```
10 REM ** CRYSTAL BALL **
20 REM
30 DIM M$(80),Y$(40),F$(120),A$(40)
40 M$="ELEMENTARY CRYSTAL BALL"
50 M$(24)=CHR$(155)
60 FOR K=1 TO 36:Y$(K)="@":NEXT K
70 M$(25)=Y$
80 OPEN #1,4,0,"K:"
90 GRAPHICS 0
100 SETCOLOR 2,0,15:SETCOLOR 1,0,0
110 SETCOLOR 4,3,8
120 POKE 752,1
130 PRINT M$:PRINT
140 PRINT "As great as computers are, they've"
150 PRINT "yet to become the master of all"
160 PRINT "vocations. The case in point is"
170 PRINT "a fortune teller and her crystal"
180 PRINT "ball.":PRINT
190 PRINT "This program marks the first in-"
200 PRINT "trusion into the age-old profession."
210 PRINT "Its operation is limited to answer-"
220 PRINT "ing YES or NO responses."
230 FOR T=1 TO 500:NEXT T
240 PRINT
250 GOSUB 730
260 POSITION 2,18
270 POKE 752,0
280 PRINT "BUT IS IS A START!"
290 POSITION 2,21
300 PRINT "STRIKE ANY KEY TO BEGIN ...";
310 POKE 764,255:GET #1,K
320 PRINT CHR$(125);M$
330 POSITION 2,20
340 PRINT "ASK QUESTION THAT HAVE 'YES' OR 'NO' "
350 PRINT "ANSWERS."
360 POSITION 2,6
370 A$="WHAT IS YOUR QUESTION?"
380 GOSUB 800:PRINT
390 INPUT F$
400 IF LEN(F$)<1 THEN 390
410 IF F$(LEN(F$),LEN(F$))="?" THEN 430
420 F$(LEN(F$)+1)="?"
430 N=INT(RND(1)*4+1)
440 IF LEN(F$)<5 THEN PRINT "THAT'S A SHORT QUESTION."
450 IF LEN(F$)>25 THEN PRINT "THAT'S A LONG QUESTION."
460 FOR T=1 TO 250:NEXT T
470 POKE 752,1
480 PRINT
490 A$="I AM THINKING ON IT NOW ..."
500 GOSUB 800
510 FOR T=1 TO INT(200*RND(1)+100)
520 SOUND 0,RND(1)*200,10,RND(1)*16
530 NEXT T
540 GOSUB 730
550 PRINT CHR$(125);M$
```

```
560 PRINT "YOUR QUESTION WAS:":PRINT
570 PRINT F$:PRINT Y$
580 PRINT "THE CRYSTAL BALL SAYS:"
590 PRINT
600 RESTORE
610 FOR K=1 TO INT(4*RND(1)+1)
620 READ A$:NEXT K
630 GOSUB 800
640 FOR T=1 TO 400:NEXT T
650 POSITION 2,20
660 POKE 752,0
670 PRINT "WANT TO PEER INTO THE CRYSTAL BALL"
680 PRINT "AGAIN (Y/N)? ";
690 POKE 764,255:GET #1,K
700 IF K=89 OR K=121 THEN 320
710 IF  NOT (K=78 OR K=110) THEN 690
720 GRAPHICS 0:END
730 FOR T=15 TO 0 STEP -0.5
740 SOUND 0,40,10,T
750 SOUND 1,100,10,T
760 NEXT T
770 SOUND 0,0,0,0
780 SOUND 1,0,0,0
790 RETURN
800 FOR T=1 TO LEN(A$)
810 PRINT CHR$(ASC(A$(T))+128);
820 NEXT T
830 PRINT :RETURN
840 DATA YES
850 DATA NO
860 DATA MAYBE
870 DATA I CAN'T HELP YOU
```

Program 52 PRIVATE SHRINK

No one really listens to anyone else, and if you try it for a while, you'll see why.

—Mignon McLaughlin

```
10 REM ** PRIVATE SHRINK **
20 REM
30 OPEN #1,4,0,"K:"
40 DIM Q$(120),X$(120),A$(120),CL$(40)
50 DIM Q(50,2),Y$(40)
60 GRAPHICS 0
70 SETCOLOR 1,13,0:SETCOLOR 2,13,15
80 SETCOLOR 4,2,0
90 PRINT CHR$(125)
100 FOR N=1 TO 11:PRINT CHR$(32);:NEXT N
110 PRINT "PRIVATE SHRINK"
120 FOR N=1 TO 36
130 Y$(N)=CHR$(96):CL$(N)=CHR$(32)
140 NEXT N
```

```
150 PRINT Y$
160 POSITION 2,19
170 PRINT Y$
180 PRINT "Enter BUGOFF to end the session."
190 PRINT "(And please avoid a lot of punctua-"
200 PRINT "tion."
210 POSITION 2,4
220 PRINT "WHAT IS ON YOUR MIND?"
230 INPUT Q$
240 IF LEN(Q$)<1 THEN 230
250 IF ASC(Q$)=32 THEN Q$=Q$(2):GOTO 250
260 Q$(LEN(Q$)+1)=CHR$(32)
270 X$="":QC=1
280 FOR N=1 TO LEN(Q$)
290 C=ASC(Q$(N))
300 IF C=32 THEN 330
310 IF C>90 THEN C=C-32
320 X$(LEN(X$)+1)=CHR$(C):GOTO 370
330 LA=LEN(X$)-1
340 Q(QC,1)=LEN(A$)+1:Q(QC,2)=Q(QC,1)+LA
350 A$(LEN(A$)+1)=X$
360 X$="":QC=QC+1
370 NEXT N
380 QC=QC-1
390 Q$=A$:A$="WHY "
400 FOR N=1 TO QC
410 X$=Q$(Q(N,1),Q(N,2))
420 IF X$="BUGOFF" THEN 610
430 IF X$="WHY" OR X$="BECAUSE" THEN 510
440 IF X$="I" THEN X$="YOU":GOTO 490
450 IF X$="YOU" AND N<QC/3 THEN X$="I":GOTO 490
460 IF X$="YOU" THEN X$="ME":GOTO 490
470 IF X$="ME" THEN X$="YOU":GOTO 490
480 IF X$="AM" THEN X$="ARE"
490 X$(LEN(X$)+1)=CHR$(32)
500 A$(LEN(A$)+1)=X$
510 NEXT N
520 A$(LEN(A$))=CHR$(63)
530 POKE 752,1
540 FOR LL=4 TO 10
550 POSITION 2,LL:PRINT CL$;
560 NEXT LL
570 POSITION 2,4
580 PRINT A$
590 POKE 752,0
600 GOTO 230
610 PRINT :PRINT Y$
620 PRINT "THAT'S OK WITH ME."
630 PRINT "I'LL SEND YOU THE BILL TOMORROW."
640 PRINT Y$
650 PRINT :PRINT
660 PRINT "Strike any key ...";
670 FOR SS=15 TO 0 STEP -1
680 SOUND 0,40,10,SS
690 NEXT SS
700 SOUND 0,0,0,0
```

```
710 POKE 764,255:GET #1,K
720 GRAPHICS 0:END
```

Program 53 ROBOT FLOOR PAINTER

Q: What did one fly say to the other when the man started painting the floor?
A: Wow. Let's make tracks.

—From *101 Ugly Things to do With a Punster* (unpublished manuscript)

```
10 REM ** ROBOT FLOOR PAINTER **
20 REM
30 DIM SC$(20),M$(20)
40 OPEN #1,4,0,"K:"
50 FOR K=1 TO 10:SC$(K)=CHR$(32):NEXT K
60 M$="ROBOT FLOOR PAINTER"
70 POKE 82,0:GRAPHICS 0:PRINT CHR$(125)
80 PRINT "Who says robots are smarter than people?"
90 PRINT "This one cannot even paint the floor in"
100 PRINT "a room without eventually surrounding"
110 PRINT "itself with wide areas of wet paint."
120 PRINT :PRINT "The thing is fun to watch, though."
130 PRINT "It can jump over narrow areas of paint,"
140 PRINT "and it is sometimes surprising how much"
150 PRINT "of the job it can complete."
160 POSITION 0,20
170 PRINT "Strike any key to start the job ... ";
180 GET #1,K
190 POKE 82,2
200 GRAPHICS 3
210 SETCOLOR 0,0,14:SETCOLOR 1,4,2
220 SETCOLOR 2,2,8
230 COLOR 1
240 PLOT 0,0
250 DRAWTO 39,0:DRAWTO 39,19
260 DRAWTO 0,19:DRAWTO 0,0
270 PLOT 1,1
280 DRAWTO 38,1:DRAWTO 38,18
290 DRAWTO 1,18:DRAWTO 1,1
300 POKE 752,1
310 PRINT SC$;"Completion:"
320 PRINT :PRINT SC$(1,8);M$
330 CH=20:CV=10:T=0:NG=0
340 I=INT(5*RND(1)-2)
350 J=INT(5*RND(1)-2)
360 IF I=0 AND J=0 THEN 340
370 T=T+1:IF T>100 THEN 580
380 NH=CH+I:NV=CV+J
390 LOCATE NH,NV,CC
400 IF CC<>0 THEN 340
410 NG=NG+1:T=0
420 FOR SS=10 TO 0 STEP -1
430 SOUND 0,SS,8,10
```

```
440 NEXT SS
450 SOUND 0,0,0,0
460 POKE 84,0
470 SC$=STR$(INT(100*NG/564))
480 SC$(LEN(SC$)+1)="%"
490 FOR N=1 TO LEN(SC$)
500 POKE 40823+N,ASC(SC$(N,N))-32
510 NEXT N
520 COLOR 3
530 PLOT CH,CV
540 COLOR 2
550 PLOT NH,NV
560 CH=NH:CV=NV
570 GOTO 380
580 FOR SS=10 TO 40:FOR SI=0 TO 10
590 SOUND 0,SS+ABS(5-SI),10,10
600 NEXT SI:NEXT SS
610 FOR SS=14 TO 0 STEP -2
620 SOUND 0,100,8,SS
630 FOR SD=1 TO 10:NEXT SD
640 NEXT SS:SOUND 0,0,0,0
650 PRINT CHR$(125)
660 PRINT "Completion: ";SC$
670 PRINT
680 POKE 752,0
690 PRINT "Strike the SPACE BAR to try again"
700 PRINT "or the X key to try something else.";
710 GET #1,K
720 IF K=32 THEN 50
730 IF  NOT (K=88 OR K=120) THEN 710
740 GRAPHICS 0
750 END
```

Program 54 ROBOT LAWNMOWER

The grass might look greener on the other side of the fence, but it grows faster on my side.

—From *A Treasury of Greatest Gripes* (unpublished)

```
10 REM ** ROBOT LAWNMOWER **
20 REM
30 DIM SC$(20),M$(20)
40 OPEN #1,4,0,"K:"
50 FOR K=1 TO 12:SC$(K)=CHR$(32):NEXT K
60 M$="ROBOT LAWNMOWER"
70 POKE 82,0:GRAPHICS 0:PRINT CHR$(125)
80 PRINT SC$;M$
90 FOR K=1 TO 40:PRINT CHR$(42);:NEXT K
100 PRINT
110 PRINT "It is safe to say that robots will soon"
120 PRINT "relieve us of the tiresome chore of"
130 PRINT "mowing our lawns. The robot lawnmower"
```

```
140 PRINT "demonstrated in this program isn't"
150 PRINT "particularly efficient, but it"
160 PRINT "eventually does the job."
170 PRINT
180 PRINT "Once you get it started, you can end"
190 PRINT "the program by striking any key."
200 POSITION 0,20
210 PRINT "Strike any key to start the job ... ";
220 GET #1,K
230 POKE 82,2:POKE 764,255
240 GRAPHICS 3
250 SETCOLOR 0,2,6:SETCOLOR 1,4,0
260 SETCOLOR 2,13,14:SETCOLOR 4,13,0
270 POKE 752,1
280 PRINT SC$(1,10);M$
290 COLOR 1
300 PLOT 0,0
310 DRAWTO 39,0:DRAWTO 39,19
320 DRAWTO 0,19:DRAWTO 0,0
330 PLOT 1,1
340 DRAWTO 38,1:DRAWTO 38,18
350 DRAWTO 1,18:DRAWTO 1,1
360 FOR N=1 TO 48
370 CH=INT(36*RND(1)+2)
380 CV=INT(16*RND(1)+2)
390 LOCATE CH,CV,X
400 IF X<>0 THEN 370
410 PLOT CH,CV
420 NEXT N
430 PRINT CHR$(125);
440 PRINT "DK. GREEN=UNCUT GRASS";
450 PRINT SC$(1,4);"Strike any"
460 PRINT "LT. GREEN=CUT GRASS";
470 PRINT SC$(1,6);"key to stop"
480 PRINT "RED=ROBOT MOWER"
490 PRINT "BROWN=STUFF NOT TO CUT";
500 CH=20:CV=10
510 I=INT(5*RND(1)-2)
520 J=INT(5*RND(1)-2)
530 IF I=0 AND J=0 THEN 510
540 NH=CH+I:NV=CV+J
550 LOCATE NH,NV,CC
560 IF  NOT (CC=0 OR CC=3) THEN 510
570 NG=NG+1:T=0
580 SOUND 0,10,10,10
590 SOUND 0,0,0,0
600 COLOR 3
610 PLOT CH,CV
620 COLOR 2
630 PLOT NH,NV
640 CH=NH:CV=NV
650 IF PEEK(764)=255 THEN 540
660 PRINT CHR$(125)
670 POKE 752,0:POKE 764,255
680 PRINT "Strike the SPACE BAR to try again"
690 PRINT "or the X key to try something else.";
```

```
700 GET #1,K
710 IF K=32 THEN GRAPHICS 0:GOTO 230
720 IF  NOT (K=88 OR K=120) THEN 700
730 POKE 82,2:GRAPHICS 0
740 END
```

Program 55 WALLPAPER SAMPLES

" 'nuff said."

—A full day's conversation overheard in Hooksett, New Hampshire

```
10 REM ** WALLPAPER SAMPLES **
20 REM
30 DIM M$(80),N$(40),P$(80),Q$(80)
40 DIM CL$(40)
50 M$="WALLPAPER SAMPLES":M$(18)=CHR$(155)
60 FOR K=1 TO 40
70 CL$(K)=CHR$(32):M$(18+K)=CHR$(61)
80 NEXT K
90 POKE 82,0:OPEN #1,4,0,"K:"
100 GRAPHICS 0
110 PRINT CHR$(125);M$
120 PRINT "Hi. What's your first name?"
130 PRINT
140 INPUT N$
150 IF LEN(N$)<1 THEN 140
160 IF LEN(P$)>=40 THEN 190
170 P$(LEN(P$)+1)=N$:P$(LEN(P$)+1)=P$:GOTO 160
180 P$=P$(1,40)
190 N$(LEN(N$)+1)=CHR$(32)
200 IF LEN(Q$)>=40 THEN 230
210 Q$(LEN(Q$)+1)=N$:Q$(LEN(Q$)+1)=Q$:GOTO 200
220 Q$=Q$(1,40)
230 POSITION 0,14
240 PRINT "Strike any key to see your custom"
250 PRINT "wallpaper samples ...";
260 POKE 764,255:GET #1,K
270 POKE 752,1
280 FOR C=1 TO 6
290 PRINT CHR$(125);M$
300 ON C GOSUB 370,420,470,580,690,750
310 NEXT C
320 GRAPHICS 0:PRINT CHR$(125);M$
330 POKE 752,0
340 POSITION 0,12:PRINT "Strike any key ...";
350 POKE 764,255:GET #1,K
360 POKE 82,2:PRINT CHR$(125):END
370 FOR L=3 TO 18
380 POSITION 11,L
390 PRINT P$(1,L-2)
400 NEXT L
410 GOTO 790
```

```
420 FOR L=7 TO 17
430 POSITION 11,L
440 PRINT P$(1,16)
450 NEXT L
460 GOTO 790
470 FOR L=3 TO 18
480 POSITION 0,L
490 PRINT P$
500 NEXT L
510 FOR L=4 TO 17
520 POSITION 11,L
530 FOR S=1 TO L-3
540 PRINT CHR$(32);
550 NEXT S:NEXT L
560 POSITION 0,20
570 GOTO 790
580 FOR L=3 TO 18
590 POSITION 0,L
600 PRINT P$
610 NEXT L
620 FOR L=5 TO 15
630 POSITION 11,L
640 FOR S=1 TO 15
650 PRINT CHR$(32);
660 NEXT S:NEXT L
670 POSITION 0,20
680 GOTO 790
690 FOR L=3 TO 18
700 POSITION 0,L
710 PRINT Q$
720 NEXT L
730 POSITION 0,20
740 GOTO 790
750 POSITION 0,3
760 PRINT Q$;CHR$(32);
770 IF PEEK(84)<19 THEN 760
780 FOR N=1 TO 40:PRINT CHR$(32);:NEXT N
790 GOTO 860
800 FOR T=1 TO 250:NEXT T
810 FOR SS=14 TO 0 STEP -1
820 SOUND 0,30,10,SS
830 FOR SD=1 TO 5:NEXT SD:NEXT SS
840 SOUND 0,0,0,0
850 RETURN
860 F=0:B=14
870 FOR CY=1 TO 15 STEP 2
880 SETCOLOR 1,CY,F:SETCOLOR 2,CY,B
890 GOSUB 800
900 SETCOLOR 1,CY,B:SETCOLOR 2,CY,F
910 GOSUB 800
920 NEXT CY
930 GRAPHICS 0
940 RETURN
```

Program 56 DON'T TOUCH

"The only way to be rid of a temptation is to yield to it."

—Oscar Wilde

```
10 REM ** DON'T TOUCH! **
20 REM
30 DIM M1$(6),M2$(27),M3$(32),A$(40)
40 OPEN #1,4,0,"K:"
50 N=1:X=6:GOSUB 320
60 N=2:X=27:GOSUB 320
70 N=3:X=32:GOSUB 320
80 GRAPHICS 0
90 SETCOLOR 2,0,15:SETCOLOR 1,0,0:SETCOLOR 4,3,8
100 POSITION 11,8
110 A$="DON'T TOUCH ANY KEY":GOSUB 460
120 K=PEEK(764):IF K=255 THEN GOTO 120
130 POKE 764,255
140 FOR H=1 TO 25
150 FOR T=1 TO 100:NEXT T
160 SOUND 0,INT(RND(1)*200),10,15
170 X=INT(8*RND(1)):SOUND 0,0,0,0
180 POKE 85,1
190 POKE 84,22*RND(1)+1
200 IF X>5 THEN GOTO 230
210 POKE 85,32*RND(1)+1:A$=M1$:GOSUB 460
220 NEXT H:GOTO 250
230 POKE 85,11*RND(1)+1:PRINT M2$
240 NEXT H
250 POSITION 1,20
260 PRINT M3$
270 POSITION 1,22
280 PRINT "NOW STRIKE ANY KEY ...";
290 GET #1,K
300 POKE 82,2:POKE 752,0
310 GRAPHICS 0:END
320 FOR Y=1 TO X
330 READ D
340 IF N=1 THEN M1$(Y)=CHR$(D)
350 IF N=2 THEN M2$(Y)=CHR$(D)
360 IF N=3 THEN M3$(Y)=CHR$(D)
370 NEXT Y
380 RETURN
390 DATA 72,65,45,72,65,46,73,32,75,78,69
400 DATA 87,32,89,79,85,32,67,79,85,76
410 DATA 68,78,39,84,32,82,69,83,73,83,84,33
420 DATA 77,65,67,72,73,78,69,83,32,65
430 DATA 82,69,32,83,85,80,69,82,73,79
440 DATA 82,32,84,79,32,72,85,77
450 DATA 65,78,83,33
460 FOR N=1 TO LEN(A$)
470 PRINT CHR$(ASC(A$(N,N))+128);
```

```
480 NEXT N
490 RETURN
```

Program 57 COMPUTER FIXER

He who is first to screw it up is often last to read the instructions.

—From *Wisdom of the Computer Age* (unpublished)

```
10 REM ** COMPUTER FIXER **
20 REM
30 DIM M$(250),D$(40),D(10,2),CL$(40)
40 FOR K=1 TO 38:CL$(K)=CHR$(32):NEXT K
50 OPEN #1,4,0,"K:"
60 GRAPHICS 0:PRINT CHR$(125)
70 GOSUB 750
80 SETCOLOR 1,8,14:SETCOLOR 2,8,0
90 SETCOLOR 4,3,0
100 FOR X=1 TO 2
110 PRINT CHR$(125)
120 POKE 752,1
130 IF X=2 THEN SETCOLOR 2,3,0
140 FOR N=1 TO 4
150 FOR SS=200 TO 150 STEP -1
160 SOUND 0,SS,10,10
170 NEXT SS
180 SOUND 0,0,0,0
190 PRINT M$(D(1,1),D(1,2));CHR$(32);
200 NEXT N
210 GOSUB 710
220 NEXT X
230 SETCOLOR 1,3,14:SETCOLOR 2,3,0
240 SETCOLOR 4,0,14
250 PRINT
260 PRINT M$(D(2,1),D(2,2))
270 PRINT
280 PRINT CHR$(253)
290 GOSUB 710
300 FOR N=3 TO 6
310 D$=M$(D(N,1),D(N,2))
320 FOR X=1 TO LEN(D$)
330 PRINT CHR$(ASC(D$(X))+128);
340 FOR T=1 TO 50
350 NEXT T:NEXT X
360 IF N=4 THEN PRINT CHR$(160);:GOTO 390
370 IF N=6 THEN PRINT CHR$(161):GOTO 390
380 PRINT
390 NEXT N
400 GOSUB 610
410 GOSUB 550
420 POSITION 1,20
430 PRINT M$(D(9,1),D(9,2));CHR$(32);
440 PRINT M$(D(10,1),D(10,2));
```

```
450 FOR N=1 TO 2:GOSUB 710:NEXT N
460 FOR LL=20 TO 22:POSITION 1,LL
470 PRINT CL$;:NEXT LL
480 POSITION 1,20
490 BX=BX+1:IF BX<3 THEN 400
500 GRAPHICS 0:PRINT "Done"
510 PRINT :PRINT "READY"
520 PRINT CHR$(160)
530 FOR T=1 TO 2000:NEXT T
540 END
550 FOR SN=1 TO 2:PRINT CHR$(253);:NEXT SN
560 FOR SS=50 TO 0 STEP -1
570 SOUND 0,SS,10,14
580 FOR SD=1 TO 5:NEXT SD:NEXT SS
590 SOUND 0,0,0,0
600 RETURN
610 FOR N=1 TO 8
620 CV=INT(10*RND(1)+9)
630 CH=INT(30*RND(1)+1)
640 POSITION 2,CV:PRINT CL$(1,36);
650 POSITION CH,CV
660 X=INT(2*RND(1)+7)
670 PRINT M$(D(X,1),D(X,2));"!"
680 GOSUB 720
690 NEXT N
700 RETURN
710 FOR T=1 TO 500:NEXT T:RETURN
720 FOR T=1 TO INT(10*RND(1)+2)
730 SOUND 0,20*RND(50)+10,10,10
740 NEXT T:RETURN
750 RESTORE
760 READ D$:D=LEN(D$)-1
770 D(1,1)=1:D(1,2)=D(1,1)+D
780 M$=D$
790 X=2:E=8:GoSUB 950
800 READ D$:D=LEN(D$)-1
810 D(3,1)=LEN(M$)+1:D(3,2)=D(3,1)+D
820 M$(LEN(M$)+1)=D$
830 X=4:E=17:GOSUB 950
840 READ D$:D=LEN(D$)-1
850 D(5,1)=LEN(M$)+1:D(5,2)=D(5,1)+D
860 M$(LEN(M$)+1)=D$
870 X=6:E=11:GOSUB 950
880 X=7:E=7:GOSUB 950
890 X=8:E=5:GOSUB 950
900 READ D$:D=LEN(D$)-1
910 D(9,1)=LEN(M$)+1:D(9,2)=D(9,1)+D
920 M$(LEN(M$)+1)=D$
930 X=10:E=11:GOSUB 950
940 RETURN
950 D$=""
960 FOR N=1 TO E
970 READ D
980 D$(N)=CHR$(D)
990 NEXT N
1000 D(X,1)=LEN(M$)+1:D(X,2)=D(X,1)+E-1
```

```
1010 M$(LEN(M$)+1)=D$
1020 RETURN
1030 DATA ACHTUNG!
1040 DATA 83,85,67,75,69,82,33,33
1050 DATA YOU'VE JUST STARTED A PROGRAM THAT
1060 DATA 73,83,32,78,79,87,32,68,69,83
1070 DATA 84,82,79,89,73,78,71
1080 DATA THIS COMPUTER
1090 DATA 70,82,79,77,32,87,73,84,72,73,78
1100 DATA 72,69,69,45,72,69,69
1110 DATA 72,65,45,72,65
1120 DATA THAT IS ANOTHER MICROCHIP
1130 DATA 66,69,73,78,71,32,70,82,73,69,68
```

Program 58 WHAT'S WRONG #1

In a few minutes a computer can make a mistake so great that it would take many men many months to equal it.

—Merele L. Meacham

```
10 REM ** WHAT'S WRONG? **
20 REM
30 PRINT CHR$(125):POSITION 1,12
40 FOR N=32 TO 1 STEP -1
50 READ D:POKE 85,N:PRINT CHR$(D);
60 NEXT N
70 POSITION 1,21
80 DATA 87,72,65,84,32,73,83,32,87,82,79
90 DATA 78,71,32,87,73,84,72,32,84,72,73
100 DATA 83,32,80,82,79,71,82,65,77,63
```

Program 59 WHAT'S WRONG #2

What's wrong? What's right? Wrong's right. Right's wrong. What's what? It's what . . .

—Overheard in a coffee house in Greenwich Village, *circa* 1957

```
10 REM ** WHAT'S WRONG #2 **
20 REM
30 OPEN #1,4,0,"K:"
40 DIM Q(34),M1$(40)
50 M1$="Q: WHAT'S WRONG WITH THIS PROGRAM?"
60 FOR N=1 TO 34
70 Q(N)=ASC(M1$(N,N))
80 NEXT N
```

```
90 PRINT CHR$(125)
100 POKE 752,1
110 FOR N=1 TO 20
120 POSITION 17+N,N
130 PRINT CHR$(Q(N))
140 GOSUB 460
150 NEXT N
160 FOR N=1 TO 14
170 POSITION 18+N,N+3
180 PRINT CHR$(Q(N+20))
190 GOSUB 460
200 NEXT N
210 FOR T=1 TO 1200:NEXT T
220 FOR N=1 TO 23
230 SOUND 0,50,10,15
240 FOR T1=1 TO 13:NEXT T1
250 SOUND 0,0,0,0
260 POSITION 10+N,N
270 READ D:PRINT CHR$(D);
280 GOSUB 460
290 NEXT N
300 FOR N=1 TO 17
310 SOUND 0,100,10,15
320 FOR T1=1 TO 13:NEXT T1
330 SOUND 0,0,0,0
340 POSITION 11+N,N+3
350 READ D:PRINT CHR$(D)
360 NEXT N
370 POSITION 1,21
380 POKE 752,0
390 PRINT "STRIKE ANY KEY";
400 GET #1,K
410 POKE 82,2:GRAPHICS 0
420 END
430 DATA 65,58,32,78,79,84,72,73,78,71,46,32,84
440 DATA 72,69,32,80,73,67,84,85,82,69,32,84,85
450 DATA 66,69,32,73,83,32,67,82,79,79,75,69,68,46
460 FOR G1=1 TO 50:NEXT G1
470 RETURN
```

Program 60 SURROGATE CUSSER

$% &**# @

—Overheard at least 200 times daily in 70 different cities around the world.

```
10 REM ** SURROGATE CUSSER **
20 REM
30 DIM M$(80),C$(40),W$(40),A$(40),P$(40)
40 DIM CX$(20)
50 FOR K=1 TO 12:M$(K)=CHR$(32):NEXT K
60 M$(13)="SURROGATE CUSSER"
70 M$(29)=CHR$(155)
```

```
80 FOR K=1 TO 40:M$(29+K)=CHR$(42):NEXT K
90 CX$="#$%&@%!"
100 FOR K=1 TO LEN(CX$)
110 CX$(K,K)=CHR$(ASC(CX$(K))+128)
120 NEXT K
130 CX$(LEN(CX$)+1)=CHR$(160)
140 POKE 82,0:OPEN #1,4,0,"K:"
150 GRAPHICS 0
160 PRINT CHR$(125);M$
170 PRINT "Everyone gets angry at someone or some-"
180 PRINT "thing every once in a while. There's"
190 PRINT "really nothing wrong with that. Some"
200 PRINT "folks, however, are reluctant to ex-"
210 PRINT "press those feelings, themselves."
220 PRINT :PRINT "Computers are supposed to be our"
230 PRINT "servants; and that is indeed the case"
240 PRINT "here."
250 POSITION 0,20
260 PRINT "Strike any key to continue ...";
270 POKE 764,255:GET #1,K
280 SETCOLOR 1,1,0:SETCOLOR 2,1,14
290 SETCOLOR 4,0,14
300 PRINT CHR$(125);M$
310 PRINT "Are you:":PRINT
320 POKE 85,5:PRINT "(1) A little bit angry"
330 POKE 85,5:PRINT "(2) Somewhat angry"
340 POKE 85,5:PRINT "(3) Very ANGRY"
350 POKE 85,5:PRINT "(4) VERY, VERY ANGRY"
360 POSITION 0,13:PRINT "Select one:";
370 POKE 764,255:GET #1,K
380 IF K<49 OR K>52 THEN 370
390 ON K-48 GOTO 400,440,520,620
400 SETCOLOR 1,9,0:SETCOLOR 2,9,10
410 GOSUB 840:GOSUB 1070
420 PRINT W$;P$;A$
430 GOTO 940
440 SETCOLOR 1,15,10:SETCOLOR 2,15,2
450 GOSUB 840:GOSUB 1070
460 PRINT CX$
470 K=4:GOSUB 1020
480 PRINT W$;P$;A$
490 PRINT CX$
500 K=10:GOSUB 1020
510 GOTO 940
520 SETCOLOR 1,4,14:SETCOLOR 2,4,0
530 GOSUB 840:GOSUB 1070
540 FOR N=1 TO INT(4*RND(1)+2)
550 PRINT CX$;:K=N:GOSUB 1020:NEXT N
560 PRINT :PRINT W$;P$;A$
570 FOR N=1 TO INT(4*RND(1)+2)
580 PRINT CX$:K=2*N:GOSUB 1020:NEXT N
590 GOSUB 1070
600 PRINT W$;A$
610 GOTO 940
```

```
620 SETCOLOR 1,3,14:SETCOLOR 2,3,0
630 PRINT CHR$(125);M$
640 PRINT "THIS ONE IS ESPECIALLY VULGAR. WOMEN"
650 PRINT "AND CHILDREN SHOULD LEAVE THE ROOM!"
660 PRINT :PRINT
670 PRINT "Strike any key when ready ...";
680 POKE 764,255:GET #1,K
690 PRINT CHR$(125);M$
700 PRINT :PRINT
710 PRINT "ARE YOU REALLY READY FOR THIS (Y/N)?";
720 POKE 764,255:GET #1,K
730 IF K=78 OR K=110 THEN 940
740 IF  NOT (K=89 OR K=121) THEN 720
750 PRINT CHR$(125);M$
760 FOR N=1 TO INT(8*RND(1)+4)
770 PRINT CX$:K=8*N:GOSUB 1020
780 NEXT N
790 FOR N=1 TO INT(8*RND(1)+4)
800 PRINT CX$;:PRINT CHR$(253);
810 NEXT N
820 K=20:GOSUB 1020:PRINT CHR$(253);
830 GOTO 940
840 PRINT CHR$(125);M$:PRINT
850 PRINT "Who or what is the object of your anger?"
860 PRINT "(If no one or nothing in particular,"
870 PRINT "simply strike the RETURN key.)"
880 PRINT
890 INPUT P$
900 IF LEN(P$)<1 THEN 920
910 P$(LEN(P$)+1)=CHR$(32)
920 PRINT CHR$(125);M$
930 RETURN
940 POSITION 0,20
950 PRINT "Would you like more cussing (Y/N)?";
960 POKE 764,255:GET #1,K
970 IF K=89 OR K=121 THEN 280
980 IF  NOT (K=78 OR K=110) THEN 960
990 POKE 82,2:GRAPHICS 0:END
1000 DATA DARN,DOGGONE,SHOOT,FIDDLESTICKS
1010 DATA JERK,MORON,WHIMP,IDIOT
1020 FOR U=1 TO 4*K
1030 SOUND 0,INT(99*RND(1)+50),10,10
1040 NEXT U
1050 SOUND 0,0,0,0
1060 RETURN
1070 RESTORE
1080 N=INT(4*RND(1)+1)
1090 FOR K=1 TO N:READ W$:NEXT K
1100 N=INT(4*RND(1)+1)
1110 FOR K=1 TO N:READ A$:NEXT K
1120 W$(LEN(W$)+1)=CHR$(32)
1130 A$(LEN(A$)+1)=CHR$(32)
1140 RETURN
```

Program 61 ARROW SHOOT I

It is commonly known that Mr. Running "Quick-Draw" Silverhorse of Truth Or Consequences, New Mexico, holds the world record for the greatest number of arrows fired from a standard bow in 14 seconds: 28 of them. What is not so commonly known is his nickname: Old Scarfoot.

—From *Personal Accounts of the Ol' West* (unpublished)

```
10 REM ** SIMPLE ARROW SHOOT(#1) **
20 REM
30 DIM B$(40),C$(40),FE$(20),F$(10)
40 DIM CL$(40),M$(110)
50 FOR K=1 TO 39
60 B$(K)=CHR$(61):C$(K)=CHR$(155)
70 CL$(K)=CHR$(32)
80 NEXT K
90 C$=C$(1,18)
100 M$="ARROW SHOOT #1":M$(15)=CHR$(155)
110 M$(16)=B$:M$(55)=C$:M$(73)=B$
120 POKE 82,0:OPEN #1,4,0,"K:"
130 GRAPHICS 0
140 SETCOLOR 1,3,0:SETCOLOR 2,3,14
150 SETCOLOR 4,0,14
160 PRINT CHR$(125)
170 POKE 752,1
180 POSITION 12,11:PRINT "ARROW SHOOT #1"
190 POKE 85,4:PRINT "A simple game for simple minds"
200 FOR T=1 TO 1000:NEXT T
210 POSITION 0,22
220 FOR P=1 TO 15
230 IF INT(P/2)=P/2 THEN GOSUB 1150
240 PRINT :NEXT P
250 PRINT CHR$(125);M$
260 GOSUB 1150
270 FE$="Arrow":F$=CHR$(27):F$(2)=CHR$(31)
280 CH=1:GOSUB 930
290 FE$="Target":F$=CHR$(2):CH=38:GOSUB 930
300 PRINT CHR$(125);M$
310 POSITION 0,3
320 PRINT "Very good. Now, your objective is to"
330 PRINT "shoot the arrow thing:"
340 GOSUB 1150
350 PRINT :POKE 85,18
360 PRINT CHR$(27);CHR$(31):PRINT
370 FOR T=1 TO 1000:NEXT T
380 PRINT "at the target thing:"
390 PRINT :POKE 85,18:PRINT CHR$(2):PRINT
400 POKE 752,0
410 PRINT "Understand (Y/N)?";
420 POKE 764,255:GET #1,K
430 IF K=89 OR K=121 THEN 470
440 IF  NOT (K=78 OR K=110) THEN 420
450 PRINT :PRINT "Too Bad."
460 FOR T=1 TO 1000:NEXT T
```

```
470 POKE 752,1
480 PRINT CHR$(125);M$
490 POSITION 8,20
500 PRINT CHR$(27);CHR$(28);"=Aim UP";
510 PRINT CL$(1,6);CHR$(27);CHR$(29);
520 PRINT "=Aim DOWN"
530 POKE 85,8:PRINT "SPACE BAR=FIRE"
540 POKE 85,8:PRINT "RETURN key=QUIT"
550 TV=INT(16*RND(1)+3)
560 POSITION 38,TV
570 PRINT CHR$(2);
580 POSITION 1,11:PRINT CHR$(27);CHR$(31);
590 POKE 764,255:GET #1,K
600 IF K=155 THEN POKE 82,2:GRAPHICS 0:END
610 IF K>90 THEN K=K-32
620 CH=PEEK(85):CV=PEEK(84)
630 IF K=45 AND CV>3 THEN CV=CV-1:GOTO 670
640 IF K=61 AND CV<18 THEN CV=CV+1:GOTO 670
650 IF K=32 THEN 700
660 GOTO 590
670 POKE 85,1:PRINT CHR$(32);
680 POSITION 1,CV:PRINT CHR$(27);CHR$(31);
690 GOTO 590
700 GOSUB 1150
710 FOR CH=1 TO 37
520 SOUND 0,10,8,INT(CH/2)
730 POSITION CH,CV
740 PRINT CHR$(32);CHR$(27);CHR$(31);
750 NEXT CH
760 SOUND 0,0,0,0
770 FOR LL=20 TO 22
780 POSITION 0,LL:PRINT CL$;
790 NEXT LL
800 POSITION 0,20
810 IF CV=TV THEN 870
820 POSITION 0,21
830 PRINT "How could you MISS that target?"
840 PRINT "That's TERRIBLE."
850 FOR T=1 TO 500:NEXT T
860 GOTO 480
870 REM
880 POSITION 0,21
890 PRINT "You got the thing!"
900 PRINT "No big deal -- but you did it right,"
910 PRINT "anyhow.";
920 GOTO 850
930 POSITION 0,20
940 PRINT "This is your ";FE$;CHR$(46)
950 PRINT CL$:PRINT CL$:POSITION 0,19
960 FOR N=1 TO 4
970 FOR CV=3 TO 17
980 FOR T=1 TO 5:NEXT T
990 POSITION CH,CV:PRINT CHR$(32)
1000 POKE 85,CH:PRINT F$;
1010 NEXT CV
1020 FOR CV=17 TO 3 STEP -1
```

```
1030 FOR T=1 TO 5:NEXT T
1040 POSITION CH,CV+1:PRINT CHR$(32);
1050 POSITION CH,CV:PRINT F$;
1060 NEXT CV
1070 NEXT N
1080 POSITION 0,21:POKE 752,0
1090 PRINT "Understand (Y/N)?";
1100 POKE 764,255:GET #1,K
1110 IF K=78 OR K=110 THEN 930
1120 IF  NOT (K=89 OR K=121) THEN 1100
1130 POKE 752,1
1140 RETURN
1150 FOR SS=46 TO 42 STEP -2
1160 FOR ST=0 TO 6
1170 SOUND 0,SS+ABS(ST-3),10,SS/4-5
1180 NEXT ST:NEXT SS
1190 SOUND 0,0,0,0
1200 RETURN
```

Program 62 ARROW SHOOT II

He shot a little arrow into the sky,
The thing came down and got 'im in the eye.
The bad news, though, came from his physician,
Sorry, kid; no more stereoscopic vision.

—From *Modern American Poetry and Conundrums*

```
10 REM ** ARROW SHOOT #2 **
20 REM
30 DIM B$(40),C$(40),M$(120),CL$(40)
40 FOR K=1 TO 39
50 B$(K)=CHR$(61):C$(K)=CHR$(155)
60 CL$(K)=CHR$(32)
70 NEXT K
80 C$=C$(1,18)
90 M$="ARROW SHOOT #2":M$(15)=CHR$(155)
100 M$(16)=B$:M$(55)=C$:M$(73)=B$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0
130 PRINT CHR$(125)
140 POKE 752,1
150 POSITION 12,11:PRINT "ARROW SHOOT #2"
160 POKE 85,4:PRINT "A tricky game for simple minds"
170 FOR T=1 TO 1000:NEXT T
180 GOSUB 980
190 POSITION 0,22
200 FOR P=1 TO 15
210 FOR T=1 TO 50:NEXT T
220 PRINT :NEXT P
230 PRINT CHR$(125);M$
240 PRINT "Strike any key to start ....";
250 POKE 764,255:GET #1,K
```

```
260 GOSUB 980
270 SETCOLOR 1,3,0:SETCOLOR 2,3,14
280 SETCOLOR 4,0,14
290 PRINT CHR$(125);M$
300 POKE 752,1
310 POSITION 8,20
320 PRINT CHR$(27);CHR$(28);
330 PRINT "=Aim UP";CL$(1,6);
340 PRINT CHR$(27);CHR$(29);
350 PRINT "=Aim DOWN"
360 POKE 85,8
370 PRINT "SPACE BAR=Fire Arrow"
380 POKE 85,8
390 PRINT "RETURN key=Quit"
400 TH=38:TV=12:DF=0
410 AH=1:AV=INT(16*RND(1)+3)
420 TI=1:SF=0
430 POKE 764,255
440 GOSUB 700
450 GOSUB 560
460 IF SF=1 THEN 530
470 K=PEEK(764)
480 IF  NOT (K=33 OR K=14 OR K=15 OR K=12) THEN K=255:GOTO 540
490 IF K=12 THEN POKE 82,2:GRAPHICS 0:END
500 IF K=14 OR K=15 THEN GOSUB 700
510 IF K=33 THEN SF=1
520 GOTO 540
530 GOSUB 770
540 IF DF=1 THEN 290
550 GOTO 450
560 TD=TD+1:IF TD<5 THEN 690
570 TD=0
580 IF TV<17 AND TV>2 THEN 600
590 TI=TI*(-1)
600 POSITION TH,TV:PRINT CHR$(32)
610 POKE 85,TH:PRINT CHR$(32);
620 TV=TV+TI
630 IF TI>0 THEN 670
640 POSITION TH,TV+1:PRINT CHR$(32);
650 POSITION TH,TV:PRINT CHR$(2);
660 GOTO 690
670 POSITION TH,TV:PRINT CHR$(32)
680 POKE 85,TH:PRINT CHR$(2);
690 RETURN
700 POSITION AH,AV:PRINT CHR$(32)
710 IF K=14 AND AV>2 THEN AV=AV-1:GOTO 730
720 IF K=15 AND AV<18 THEN AV=AV+1
730 POSITION AH,AV:PRINT CHR$(32);
740 POSITION AH,AV
750 PRINT CHR$(27);CHR$(31);
760 GOTO 840
770 IF AH=1 THEN 790
780 IF AH>37 THEN 850
790 POSITION AH,AV
800 PRINT CHR$(32);
810 PRINT CHR$(27);CHR$(31)
```

```
820 AH=AH+1
830 SOUND 0,10,8,INT(AH/3)
840 K=255:POKE 764,K:RETURN
850 SOUND 0,0,0,0
860 FOR LL=20 TO 23:POSITION 0,LL
870 PRINT CL$(1,39);:NEXT LL
880 POSITION 2,21
890 IF AV=TV AND ABS(AH-TH)<2 THEN 920
900 PRINT "You MISSED it."
910 GOTO 960
920 GOSUB 980
930 PRINT "You GOT the little sucker."
940 POKE 85,8
950 PRINT "NICE SHOOTING.";
960 FOR T=1 TO 500:NEXT T
970 DF=1:RETURN
980 FOR ST=5 TO 1 STEP -1:FOR SS=1 TO 10
990 SOUND 0,30+ABS(SS-5),10,3*ST
1000 NEXT SS:NEXT ST
1010 SOUND 0,0,0,0
1020 RETURN
```

Program 63 ARROW SHOOT III

OK. So you shoot an arrow at the target. It goes half way. Right. Then it goes half the rest of the way. Right? Then it goes half the rest of the way again. Right? It never gets there. Right?

—Zeno (paraphrased)

```
10 REM ** ARROW SHOOT #3 **
20 REM
30 DIM B$(40),C$(40),M$(120),CL$(40)
40 FOR K=1 TO 39
50 B$(K)=CHR$(61):C$(K)=CHR$(155)
60 CL$(K)=CHR$(32)
70 NEXT K
80 C$=C$(1,18)
90 M$="ARROW SHOOT #3":M$(15)=CHR$(155)
100 M$(16)=B$:M$(55)=C$:M$(73)=B$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0
130 PRINT CHR$(125)
140 POKE 752,1
150 POSITION 12,11:PRINT "ARROW SHOOT #3"
160 POKE 85,3:PRINT "A little game for muddled minds"
170 FOR T=1 TO 1000:NEXT T
180 GOSUB 1260
190 POSITION 0,22
200 FOR P=1 TO 15
210 FOR T=1 TO 50:NEXT T
220 PRINT :NEXT P
```

```
230 PRINT CHR$(125);M$
240 PRINT "Strike any key to start ....";
250 POKE 764,255:GET #1,K
260 GOSUB 1260
270 SETCOLOR 1,3,0:SETCOLOR 2,3,14
280 SETCOLOR 4,0,14
290 PRINT CHR$(125);M$
300 POKE 752,1
310 POSITION 8,20
320 PRINT CHR$(27);CHR$(28);
330 PRINT "=Aim UP";CL$(1,6);
340 PRINT CHR$(27);CHR$(29);
350 PRINT "=Aim DOWN"
360 POKE 85,8
370 PRINT "SPACE BAR=Fire Arrow"
380 POKE 85,8
390 PRINT "RETURN key=Quit"
400 TH=38:TV=12:DF=0
410 AH=1:AV=INT(16*RND(1)+3)
420 TI=1:SF=0
430 DI=-1:DH=36:DV=12
440 GOSUB 710
450 GOSUB 570
460 GOSUB 1140
470 IF SF=1 THEN 540
480 K=PEEK(764)
490 IF  NOT (K=33 OR K=14 OR K=15 OR K=12) THEN K=255:GOTO 530
500 IF K=12 THEN POKE 82,2:GRAPHICS 0:END
510 IF K=14 OR K=15 THEN GOSUB 710
520 IF K=33 THEN SF=1
530 GOTO 550
540 GOSUB 780
550 IF DF=1 THEN 290
560 GOTO 450
570 TD=TD+1:IF TD<2 THEN 700
580 TD=0
590 IF TV<17 AND TV>2 THEN 610
600 TI=TI*(-1)
610 POSITION TH,TV:PRINT CHR$(32)
620 POKE 85,TH:PRINT CHR$(32);
630 TV=TV+TI
640 IF TI>0 THEN 680
650 POSITION TH,TV+1:PRINT CHR$(32);
660 POSITION TH,TV:PRINT CHR$(2);
670 GOTO 700
680 POSITION TH,TV:PRINT CHR$(32)
690 POKE 85,TH:PRINT CHR$(2);
700 RETURN
710 POSITION AH,AV:PRINT CHR$(32)
720 IF K=14 AND AV>2 THEN AV=AV-1:GOTO 740
730 IF K=15 AND AV<18 THEN AV=AV+1
740 POSITION AH,AV:PRINT CHR$(32);
750 POSITION AH,AV
760 PRINT CHR$(27);CHR$(31);
770 K=255:POKE 764,K:RETURN
780 IF AH<DH-1 THEN 810
```

```
790 IF AV=DV AND ABS(AH-DH)<2 THEN 860
800 IF AH>37 THEN SOUND 0,0,0,0:GOTO 860
810 POSITION AH,AV
820 PRINT CHR$(32);:PRINT CHR$(27);CHR$(31);
830 SOUND 0,10,8,INT(AH/3)
840 AH=AH+1
850 RETURN
860 FOR LL=20 TO 23:POSITION 0,LL
870 PRINT CL$(1,39);:NEXT LL
880 POSITION 0,20
890 IF AV=DV AND ABS(AH-DH)<2 THEN 970
900 IF AV=TV AND ABS(AH-TH)<2 THEN 930
910 PRINT "You MISSED it."
920 GOTO 1120
930 GOSUB 1260
940 PRINT "You GOT the little sucker."
950 PRINT :PRINT "NICE SHOOTING.";
960 GOTO 1120
970 GOSUB 1260
980 PRINT "You Shot Another Hunter!"
990 FOR SN=1 TO 16:FOR SS=0 TO 20
1000 SOUND 1,20+ABS(SS-10),10,SN
1010 NEXT SS
1020 NEXT SN
1030 FOR SN=0 TO 4
1040 SOUND 0,50,10,2
1050 SOUND 1,10,8,4
1060 FOR SD=1 TO 15:NEXT SD
1070 SOUND 0,0,0,0
1080 SOUND 1,0,0,0
1090 NEXT SN
1100 SOUND 1,0,0,0
1110 PRINT "REPORT IMMEDIATELY TO THE LOCAL SHERIFF."
1120 FOR T=1 TO 500:NEXT T
1130 DF=1:RETURN
1140 IF DV<17 AND DV>2 THEN 1160
1150 DI=DI*(-1)
1160 POSITION DH,DV:PRINT CHR$(32)
1170 POKE 85,DH:PRINT CHR$(32);
1180 DV=DV+DI
1190 IF DI>0 THEN 1230
1200 POSITION DH,DV+1:PRINT CHR$(32);
1210 POSITION DH,DV:PRINT CHR$(20);
1220 GOTO 1250
1230 POSITION DH,DV:PRINT CHR$(32)
1240 POKE 85,DH:PRINT CHR$(20)
1250 RETURN
1260 FOR ST=5 TO 1 STEP -1:FOR SS=1 TO 10
1270 SOUND 0,30+ABS(SS-5),10,3*ST
1280 NEXT SS:NEXT ST
1290 SOUND 0,0,0,0
1300 RETURN
```

Program 64 ARROW SHOOT IV

There's a lollipop born every minute.

—P.T. Barnum's Uncle Ed

```
10 REM ** ARROW SHOOT #4 **
20 REM
30 DIM B$(40),C$(40),M$(120),CL$(40)
40 FOR K=1 TO 39
50 B$(K)=CHR$(61):C$(K)=CHR$(155)
60 CL$(K)=CHR$(32)
70 NEXT K
80 C$=C$(1,18)
90 M$="ARROW SHOOT #4":M$(15)=CHR$(155)
100 M$(16)=B$:M$(55)=C$:M$(73)=B$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0
130 PRINT CHR$(125)
140 POKE 752,1
150 POSITION 12,11:PRINT "ARROW SHOOT #4"
160 POKE 85,4:PRINT "A simple game for tricky minds"
170 FOR T=1 TO 1000:NEXT T
180 GOSUB 1120
190 POSITION 0,22
200 FOR P=1 TO 15
210 FOR T=1 TO 50:NEXT T
220 PRINT :NEXT P
230 PRINT CHR$(125);M$
240 PRINT "Strike any key to start ....";
250 POKE 764,255:GET #1,K
260 GOSUB 1120
270 SETCOLOR 1,13,14:SETCOLOR 2,13,0
280 SETCOLOR 4,3,0
290 PRINT CHR$(125);M$
300 POKE 752,1
310 POSITION 8,20
320 PRINT CHR$(27);CHR$(28);
330 PRINT "=Aim UP";CL$(1,6);
340 PRINT CHR$(27);CHR$(29);
350 PRINT "=Aim DOWN"
360 POKE 85,8
370 PRINT "SPACE BAR=Fire Arrow"
380 POKE 85,8
390 PRINT "RETURN key=Quit"
400 TH=38:TV=12:DF=0
410 AH=1:AV=INT(16*RND(1)+3)
420 TI=1:SF=0
430 POKE 764,255
440 GOSUB 700
450 GOSUB 560
```

```
460 IF SF=1 THEN 530
470 K=PEEK(764)
480 IF  NOT (K=33 OR K=14 OR K=15 OR K=12) THEN K=255:GOTO 540
490 IF K=12 THEN POKE 82,2:GRAPHICS 0:END
500 IF K=14 OR K=15 THEN GOSUB 700
510 IF K=33 THEN SF=1
520 GOTO 540
530 GOSUB 770
540 IF DF=1 THEN 290
550 GOTO 450
560 TD=TD+1:IF TD<5 THEN 690
570 TD=0
580 IF TV<17 AND TV>2 THEN 600
590 TI=TI*(-1)
600 POSITION TH,TV:PRINT CHR$(32)
610 POKE 85,TH:PRINT CHR$(32);
620 TV=TV+TI
630 IF TI>0 THEN 670
640 POSITION TH,TV+1:PRINT CHR$(32);
650 POSITION TH,TV:PRINT CHR$(2);
660 GOTO 690
670 POSITION TH,TV:PRINT CHR$(32)
680 POKE 85,TH:PRINT CHR$(2);
690 RETURN
700 POSITION AH,AV:PRINT CHR$(32)
710 IF K=14 AND AV>2 THEN AV=AV-1:GOTO 730
720 IF K=15 AND AV<18 THEN AV=AV+1
730 POSITION AH,AV:PRINT CHR$(32);
740 POSITION AH,AV
750 PRINT CHR$(27);CHR$(31);
760 GOTO 840
770 IF AH=1 THEN 790
780 IF AH>37 THEN 850
790 POSITION AH,AV
800 PRINT CHR$(32);
810 PRINT CHR$(27);CHR$(31)
820 AH=AH+1
830 SOUND 0,10,8,INT(AH/3)
840 K=255:POKE 764,K:RETURN
850 SOUND 0,0,0,0
860 FOR LL=20 TO 23:POSITION 0,LL
870 PRINT CL$(1,39);:NEXT LL
880 POSITION 2,21
890 IF AV=TV AND ABS(AH-TH)<2 THEN 940
900 PRINT "You MISSED it."
910 GOTO 920
920 FOR T=1 TO 500:NEXT T
930 DF=1:RETURN
940 GOSUB 1120
950 FOR AH=AH-1 TO 1 STEP -1
960 POSITION AH,AV
970 PRINT CHR$(27);CHR$(30);
980 PRINT CHR$(32);
990 SOUND 0,10,8,INT(AH/3)
1000 NEXT AH
1010 SOUND 0,0,0,0
```

```
1020 FOR LL=20 TO 23:POSITION 0,LL
1030 PRINT CL$(1,39);:NEXT LL
1040 POSITION 0,20
1050 PRINT "OUCH! $%#%&@"
1060 FOR SN=1 TO 6:FOR SS=10 TO 20
1070 SE=10*RND(1)+SS
1080 SOUND 0,SE,10,10
1090 NEXT SS:NEXT SN
1100 SOUND 0,0,0,0
1110 GOTO 920
1120 FOR ST=5 TO 1 STEP -1:FOR SS=1 TO 10
1130 SOUND 0,30+ABS(SS-5),10,3*ST
1140 NEXT SS:NEXT ST
1150 SOUND 0,0,0,0
1160 RETURN
```

Program 65 GENETIC EXPERIMENTS

The many slight differences which appear in the offspring from the same parents, or which it may be presumed have thus arisen, from being observed in the individuals of the same species inhabiting the same confined locality, may be called individual differences.

—Charles Darwin in *The Origin of Species*

```
10 REM ** GENETIC EXPERIMENTS **
20 REM
30 DIM M$(80),LM$(40),F$(40),W$(40)
40 FOR K=1 TO 10:M$(K)=CHR$(32):NEXT K
50 M$(11)="GENETIC EXPERIMENTS"
60 M$(30)=CHR$(155)
70 FOR K=1 TO 40:M$(30+K)=CHR$(42):NEXT K
80 POKE 82,0:OPEN #1,4,0,"K:"
90 GRAPHICS 0
100 PRINT CHR$(125);M$
110 PRINT "This program offers you a chance to"
120 PRINT "conduct some award-winning experiments"
130 PRINT "in genetic cross-breeding."
140 POSITION 0,20
150 PRINT "Strike any key to begin ...";
160 POKE 764,255:GET #1,K
170 PRINT CHR$(125);M$
180 PRINT "Enter a species (Male):"
190 INPUT LM$
200 IF LEN(LM$)<3 THEN 190
210 PRINT :PRINT "Enter a species (Female):"
220 INPUT F$
230 IF LEN(F$)<3 THEN 220
240 W$=LM$(1,2)
250 W$(3)=F$(LEN(F$)-2)
260 GOSUB 430
270 PRINT :PRINT "Would you like to switch the male and"
280 PRINT "female species (Y/N)?";
290 POKE 764,255:GET #1,K
```

```
300 IF K=78 OR K=110 THEN 350
310 IF  NOT (K=89 OR K=121) THEN 290
320 W$=F$(1,2)
330 W$(3)=LM$(LEN(LM$)-2)
340 GOSUB 430
350 POSITION 0,21
360 PRINT "Would you like to try a new"
370 PRINT "experiment (Y/N)?";
380 POKE 764,255:GET #1,K
390 IF K=89 OR K=121 THEN 170
400 IF  NOT (K=78 OR K=110) THEN 380
410 POKE 82,2:GRAPHICS 0
420 END
430 PRINT M$(30)
440 PRINT "Cross them that way, and you get:"
450 POKE 85,INT((39-LEN(W$))/2)
460 FOR N=1 TO LEN(W$)
470 PRINT CHR$(ASC(W$(N))+128);
480 NEXT N
490 PRINT
500 RETURN
```

Program 66 GOPHER HUNT

Go-go Gophers

—Sign on a pest control truck in Kokomo
—Sign on a frat house in Duluth

```
10 REM ** GOPHER HUNT **
20 REM
30 DIM M$(80),B$(40),C$(40),GM$(40),MM$(40)
40 FOR K=1 TO 15:M$(K)=CHR$(32):NEXT K
50 M$(16)="GOPHER HUNT":M$(27)=CHR$(155)
60 FOR K=1 TO 40
70 M$(27+K)=CHR$(20):B$(K)=CHR$(160)
80 C$(K)=CHR$(32)
90 NEXT K
100 GM$="YOU GOT IT":MM$="YOU MISSED THAT ONE"
110 FOR K=1 TO LEN(GM$)
120 GM$(K,K)=CHR$(ASC(GM$(K,K))+128)
130 NEXT K
140 FOR K=1 TO LEN(MM$)
150 MM$(K,K)=CHR$(ASC(MM$(K,K))+128)
160 NEXT K
170 OPEN #1,4,0,"K:"
180 POKE 82,0:GRAPHICS 0
190 PRINT CHR$(125);M$
200 PRINT "This program gives you a chance to"
210 PRINT "practice catching gophers in a lawn."
220 PRINT "The pesky little critters pop up here"
230 PRINT "and there, and you never know where."
```

```
240 PRINT :PRINT "You can chase them by working the arrow"
250 PRINT "keys."
260 PRINT :PRINT "There's a catch to catching a gopher,"
270 PRINT "though:  every time you catch one"
280 PRINT "of them, they give you fewer moves"
290 PRINT "for catching the next."
300 POSITION 0,20
310 PRINT "Strike any key to begin ... ";
320 GET #1,K
330 POKE 752,1
340 SETCOLOR 1,12,0:SETCOLOR 2,12,14
342 SETCOLOR 4,1,6
350 PRINT CHR$(125)
360 FOR LL=0 TO 18
370 POSITION 0,LL:PRINT B$;
380 NEXT LL
390 LEV=50:SC=0:COUNT=LEV
400 PY=10:PX=20:NY=PY:NX=PX:GY=1:GX=1
410 POSITION PX,PY:PRINT CHR$(144)
420 POSITION GX,GY:PRINT CHR$(160)
430 GY=INT(16*RND(1)+2):GX=INT(36*RND(1)+2)
440 POSITION GX,GY:PRINT CHR$(148)
450 FOR SS=20 TO 10 STEP -1
460 SOUND 0,SS,10,10
470 NEXT SS
480 SOUND 0,0,0,0
490 GOSUB 940
500 POKE 702,64
510 GET #1,K
520 IF K=81 OR K=113 THEN 1050
530 IF  NOT (K=43 OR K=42 OR K=61 OR K=45) THEN 510
540 COUNT=COUNT-1
550 GOSUB 1000
560 IF COUNT>0 THEN 680
570 POSITION 10,19:PRINT MM$
580 FOR SS=10 TO 50
590 SOUND 0,SS,10,10
600 NEXT SS
610 SOUND 0,0,0,0
620 FOR T=1 TO 500:NEXT T
630 POSITION 0,19:PRINT C$(1,39)
640 LEV=LEV-3
650 IF LEV<=0 THEN 1050
660 COUNT=LEV
670 GOTO 420
680 IF K=43 THEN 730
690 IF K=42 THEN 750
700 IF K=61 THEN 770
710 IF PY<=0 THEN 510
720 NY=PY-1:GOTO 790
730 IF PX<=0 THEN 510
740 NX=PX-1:GOTO 790
750 IF PX>=38 THEN 510
760 NX=PX+1:GOTO 790
770 IF PY>=18 THEN 510
780 NY=PY+1:GOTO 790
```

```
790 IF NX=GX AND NY=GY THEN 840
800 POSITION PX,PY:PRINT CHR$(160)
810 PX=NX:PY=NY
820 POSITION PX,PY:PRINT CHR$(144)
830 GOTO 510
840 SC=SC+1
850 GOSUB 1000
860 POSITION 15,19:PRINT GM$
870 FOR SN=1 TO 4:FOR SS=30 TO 10 STEP -1
880 SOUND 0,SS,10,10
890 NEXT SS:NEXT SN
900 SOUND 0,0,0,0
930 GOTO 620
940 POSITION 0,20
950 PRINT "MOVES REMAINING FOR THIS GOPHER:"
960 PRINT "GOPHERS CAUGHT:"
970 POKE 85,5:PRINT "Use arrow keys to move."
980 POKE 85,5:PRINT "Strike Q key to QUIT the game.";
990 GOSUB 1000:RETURN
1000 POSITION 32,20:PRINT COUNT;
1010 PRINT C$(1,39-PEEK(85));
1020 POSITION 15,21:PRINT SC;
1030 PRINT C$(1,39-PEEK(85));
1040 RETURN
1050 PRINT CHR$(125);M$
1060 POKE 752,0
1070 PRINT
1080 PRINT "YOU ARE DONE HUNTING GOPHERS."
1090 PRINT
1100 PRINT "YOU CAUGHT ";SC;" OF THEM."
1110 POSITION 0,20
1120 PRINT "Do you want to play again (Y/N)? ";
1130 GET #1,K
1140 IF K=89 OR K=121 THEN 350
1150 IF  NOT (K=78 OR K=110) THEN 1130
1160 POKE 82,2:GRAPHICS 0:END
```

Program 67 PARACHUTE JUMPER

If at first you don't succeed, try and try again.

—Someone who has no sky-diving friends

```
10 REM ** PARACHUTE JUMPER **
20 REM
30 DIM M$(80),GM$(40),CL$(40)
40 FOR K=1 TO 14:GM$(K)=CHR$(32):NEXT K
50 GM$(15)="* GEROMINO *"
60 GM$(28)=GM$(1,12)
70 M$=GM$(1,12):M$(13)="PARACHUTE JUMPER"
80 M$(29)=CHR$(155)
90 FOR K=1 TO 40
100 M$(LEN(M$)+1)=CHR$(42):CL$(K)=CHR$(32)
```

```
110 NEXT K
120 POKE 82,0
130 OPEN #1,4,0,"K:"
140 FU=0
150 GRAPHICS 0
160 PRINT CHR$(125);M$
170 PRINT "YOU ARE AN ACE SKYDIVER. YOUR MISSION"
180 PRINT "IS TO DROP INTO A CITY AND SAVE SOME"
190 PRINT "STOLEN PLUTONIUM.":PRINT
200 PRINT "IT IS UP TO YOU TO SIGNAL THE PILOT"
210 PRINT "THAT YOU ARE READY TO JUMP BY STRIKING"
220 PRINT "THE SPACE BAR.":PRINT
230 PRINT "IF YOU FAIL TO JUMP AT THE CORRECT"
240 PRINT "MOMENT, YOU WILL SMASH INTO A BUILDING."
250 PRINT "OR IF YOU FAIL TO JUMP AT ALL, THE"
260 PRINT "PLANE WILL RUN OUT OF FUEL, AND YOU"
270 PRINT "WILL ALL PERISH."
280 POSITION 0,20
290 PRINT "Strike any key to begin ...";
300 GET #1,K
310 SK=1
320 POKE 752,1
330 PRINT CHR$(125);M$
340 SK=SK+1:IF SK>15 THEN SK=1
350 SETCOLOR 1,SK,14:SETCOLOR 2,SK,0
360 FOR Y=2 TO 20
370 POSITION 0,Y
380 FOR K=1 TO 40:PRINT CHR$(160);:NEXT K
390 NEXT Y
400 POSITION 0,22
410 POKE 85,2
420 PRINT "** Strike the SPACE BAR to jump **"
430 DH=1:NH=1
440 FL=0
450 FOR P=0 TO 39
460 H=INT(10*RND(1)+10)
470 FOR VV=H TO 19
480 POSITION P,VV
490 PRINT CHR$(32);
500 NEXT VV
510 NEXT P
520 FOR VV=2 TO 19
530 POSITION 17,VV
540 PRINT CHR$(160);
550 NEXT VV
560 POSITION 17,19
570 PRINT CHR$(16)
580 V=5
590 SOUND 1,10,4,4
600 FOR H=1 TO 39
610 POSITION H,V:PRINT CHR$(147)
620 IF FL<>1 THEN 670
630 POSITION H-1,V+1:PRINT CHR$(160);
640 POSITION NH,V+DH
650 IF DH<5 THEN PRINT CHR$(224):GOTO 670
660 PRINT CHR$(96);
```

```
670 FOR T=1 TO 20:NEXT T
680 POSITION H,V:PRINT CHR$(160)
690 POSITION NH,V+DH:PRINT CHR$(160)
700 KB=PEEK(764):IF KB=255 THEN 740
710 IF FL=1 THEN 740
720 IF KB=33 THEN FL=1:R=H:GOSUB 1200
730 KB=255:POKE 764,KB
740 IF FL=1 THEN DH=H-R
750 IF DH<5 THEN NH=H
760 LOCATE NH,V+DH+1,U
770 IF  NOT (U=160 OR U=32) THEN 1000
780 IF U=32 THEN 920
790 NEXT H
800 H=1
810 FU=FU+1
820 IF FU<2 THEN 590
830 IF FU<>2 THEN 910
840 POSITION 7,20
850 PRINT "** YOU'RE LOW ON FUEL **"
860 FOR SN=1 TO 3:FOR SS=50 TO 20 STEP -2
870 SOUND 0,SS,10,10
880 NEXT SS:NEXT SN
890 SOUND 0,0,0,0
900 GOTO 590
910 IF FU=3 THEN FL=1:GOSUB 1200:GOTO 590
920 FOR LL=21 TO 22:POSITION 0,LL
930 PRINT CL$(1,38);:NEXT LL
940 POSITION 13,21:PRINT "** SPLAT **"
950 FOR SS=14 TO 0 STEP -2
960 SOUND 1,200,8,SS
970 FOR SD=1 TO 5:NEXT SD:NEXT SS
980 POKE 85,8:PRINT "YOU JUST HIT A BUILDING";
990 GOTO 1090
1000 FOR SN=1 TO 100:SS=INT(100*RND(1)+20)
1010 SOUND 1,SS,10,10
1020 NEXT SN
1030 SOUND 1,0,0,0
1040 GRAPHICS 0:PRINT CHR$(125);M$
1050 POSITION 6,5
1060 PRINT "** CONGRATULATIONS, ACE ***"
1070 PRINT :POKE 85,8
1080 PRINT "You saved the plutonium"
1090 POSITION 0,20
1100 PRINT "Would you like another mission (Y/N)? ";
1110 FOR SS=14 TO 0 STEP -1
1120 SOUND 0,20,10,SS
1130 FOR SD=1 TO 5:NEXT SD:NEXT SS
1140 SOUND 0,0,0,0
1150 POKE 764,255:GET #1,K
1160 IF K=89 OR K=121 THEN FU=0:GOTO 320
1170 IF  NOT (K=78 OR K=110) THEN 1150
1180 POKE 82,2:GRAPHICS 0:PRINT CHR$(125)
1190 END
1200 POSITION 0,21:PRINT GM$;
1210 FOR SN=14 TO 0 STEP -2
1220 SOUND 0,50,10,SN
```

```
1230 FOR SD=1 TO 10:NEXT SD
1240 NEXT SN
1250 SOUND 0,0,0,0
1260 FU=0
1270 R=H:DH=H-R
1280 IF DH<5 THEN NH=H
1290 RETURN
```

Program 68 LIFEGUARD

Tall lifeguards don't have to know how to swim.

—Lazarus Long (paraphrased)

```
10 REM ** LIFEGUARD **
20 REM
30 POKE 82,0
40 DIM M$(80),K$(5)
50 OPEN #1,4,0,"K:"
60 FOR K=1 TO 15:M$(LEN(M$)+1)=" ":NEXT K
70 M$(16)="LIFEGUARD":M$(25)=CHR$(155)
80 FOR K=1 TO 40:M$(LEN(M$)+1)="*":NEXT K
90 SETCOLOR 1,13,14:SETCOLOR 2,13,0
100 SETCOLOR 4,8,12
110 PRINT CHR$(125);M$
120 PRINT
130 PRINT "YOU ARE A LIFEGUARD AT THE OL' SWIMMING"
140 PRINT "HOLE. A SWIMMER IS DROWNING, AND YOU"
150 PRINT "ARE ABOUT TO GO TO THE RESCUE"
160 PRINT
170 PRINT "THE ONLY PROBLEM IS THAT THE SWIMMER IS"
180 PRINT "UNDERWATER MOST OF THE TIME. YOU HAVE"
190 PRINT "TO SWIM IN ONE DIRECTION OR ANOTHER,"
200 PRINT "AND LISTEN FOR THE SCREAMS FOR HELP."
210 PRINT "THE GREATER THE NUMBER OF SCREAMS, THE"
220 PRINT "CLOSER YOU ARE (AT THE MOMENT)."
230 POSITION 0,20
240 PRINT "STRIKE ANY KEY TO BEGIN ...";
250 POKE 764,255:GET #1,K
260 PRINT CHR$(125);M$:PRINT
270 PRINT "WHERE IS THE SWIMMER ?":PRINT
280 PRINT "ENTER EAST, WEST, NORTH, SOUTH OR ROCK"
290 PRINT
300 INPUT K$
310 IF LEN(K$)<1 THEN 300
320 K$=K$(1,1)
330 IF ASC(K$)>90 THEN K$=CHR$(ASC(K$)-32)
340 P=INT(RND(1)*5+1)
350 IF K$<>"N" THEN 400
360 IF P=1 THEN 600
370 IF P=2 THEN L=1:GOTO 740
380 IF P<4 THEN L=2:GOTO 740
390 L=3:GOTO 740
```

```
400 IF K$<>"S" THEN 450
410 IF P=2 THEN GOTO 600
420 IF P=1 THEN L=1:GOTO 740
430 IF P=3 THEN L=2:GOTO 740
440 L=3:GOTO 740
450 IF K$<>"E" THEN 500
460 IF P=3 THEN GOTO 600
470 IF P=2 THEN L=1:GOTO 740
480 IF P=1 THEN L=2:GOTO 740
490 L=3:GOTO 740
500 IF K$<>"W" THEN 550
510 IF P=4 THEN GOTO 600
520 IF P=5 THEN L=1:GOTO 740
530 IF P>3 THEN L=2:GOTO 740
540 L=3:GOTO 740
550 IF K$<>"R" THEN 280
560 IF P=5 THEN GOTO 600
570 IF P=4 THEN L=1:GOTO 740
580 IF P=3 THEN L=2:GOTO 740
590 L=3:GOTO 740
600 PRINT CHR$(125);M$:PRINT
610 FOR K=1 TO 10
620 SOUND 0,INT(20*RND(1)+10),10,10
630 NEXT K
640 SOUND 0,0,0,0
650 PRINT
660 PRINT "GOOD JOB YOU JUST SAVED THE"
670 PRINT "SWIMMER'S LIFE."
680 POSITION 0,20
690 PRINT "ARE YOU STILL ON DUTY (Y/N)?";
700 POKE 764,255:GET #1,K
710 IF K=89 OR K=121 THEN 260
720 IF  NOT (K=78 OR K=110) THEN 700
730 GRAPHICS 0:POKE 82,2:END
740 PRINT CHR$(125);M$:PRINT
750 FOR J=1 TO 5-L
760 PRINT "HELP"
770 FOR SN=10 TO 30
780 SOUND 0,SN,10,10
790 NEXT SN
800 SOUND 0,0,0,0
810 NEXT J
820 GOTO 270
```

Program 69 COMPUTERIZED HOME STATUS

The more we have to do with computers, the more we can know about matters of lesser importance.

—Anonymous (by choice)

```
10 REM ** HOME STATUS REPORTS **
20 REM
```

```
30 DIM M$(80),A$(100),B$(100),C$(100)
40 DIM A(5,2),B(5,2),C(5,2)
50 DIM D$(80),E$(50),F$(50),G$(50),X$(25)
60 DIM D(11,2),E(2,2),F(2,2),G(2,2)
70 DIM H$(100),H(11,2),Y$(25)
80 M$="COMPUTERIZED HOME STATUS REPORT"
90 M$(32)=CHR$(155)
100 FOR K=1 TO 40:M$(32+K)=CHR$(8):NEXT K
110 POKE 82,0
120 OPEN #1,4,0,"K:"
130 GRAPHICS 0
140 SETCOLOR 1,1,0:SETCOLOR 2,1,14
150 PRINT CHR$(125);M$
160 PRINT :PRINT "Please wait ..."
170 FOR Y=1 TO 3:FOR N=1 TO 5
180 READ X$:X=LEN(X$)-1
190 ON Y GOTO 200,230,260
200 A(N,1)=LEN(A$)+1:A(N,2)=A(N,1)+X
210 A$(LEN(A$)+1)=X$
220 GOTO 280
230 B(N,1)=LEN(B$)+1:B(N,2)=B(N,1)+X
240 B$(LEN(B$)+1)=X$
250 GOTO 280
260 C(N,1)=LEN(C$)+1:C(N,2)=C(N,1)+X
270 C$(LEN(C$)+1)=X$
280 NEXT N:NEXT Y
290 FOR Y=1 TO 4:FOR N=1 TO 2
300 READ X$:X=LEN(X$)-1
310 ON Y GOTO 320,350,380,410
320 D(N,1)=LEN(D$)+1:D(N,2)=D(N,1)+X
330 D$(LEN(D$)+1)=X$
340 GOTO 430
350 E(N,1)=LEN(E$)+1:E(N,2)=E(N,1)+X
360 E$(LEN(E$)+1)=X$
370 GOTO 430
380 F(N,1)=LEN(F$)+1:F(N,2)=F(N,1)+X
390 F$(LEN(F$)+1)=X$
400 GOTO 430
410 G(N,1)=LEN(G$)+1:G(N,2)=G(N,1)+X
420 G$(LEN(G$)+1)=X$
430 NEXT N:NEXT Y
440 FOR N=1 TO 11
450 Y$="TOO ":READ X$
460 Y$(5)=X$:X=LEN(Y$)-1
470 H(N,1)=LEN(H$)+1:H(N,2)=H(N,1)+X
480 H$(LEN(H$)+1)=Y$
490 NEXT N
500 DL=1000
510 FOR CY=1 TO 5
520 GOSUB 1070
530 DL=DL-100
540 FOR T=1 TO DL
550 NEXT T
560 NEXT CY
570 GOSUB 1400
580 FOR CY=1 TO 10
```

```
590 GOSUB 1070:GOSUB 970
600 DL=DL-200
610 FOR T=1 TO DL
620 NEXT T
630 NEXT CY
640 GOSUB 1400
650 FOR CY=1 TO 5
660 D$=""
670 FOR X=1 TO 2
680 Y=INT(11*RND(1)+1)
690 X$=H$(H(Y,1),H(Y,2)):Z=LEN(X$)-1
700 D(X,1)=LEN(D$)+1:D(X,2)=D(X,1)+Z
710 D$(LEN(D$)+1)=X$
720 NEXT X
730 GOSUB 1070:GOSUB 970
740 DL=DL-300
750 IF DL<0 THEN 780
760 FOR T=1 TO DL
770 NEXT T
780 NEXT CY
790 DL=DL-500
800 GOSUB 1400
810 BX=BX+1
820 IF BX<2 THEN 510
830 FOR SS=10 TO 100:FOR SE=1 TO 10
840 SOUND 0,SS+ABS(SE-5),10,10
850 NEXT SE:NEXT SS
860 SOUND 0,0,0,0
870 FOR SS=1 TO 2:PRINT CHR$(253):NEXT SS
880 PRINT CHR$(125);M$:PRINT
890 PRINT "ARRGH! I'M DEAD..."
900 POSITION 0,20
910 POKE 752,0
920 PRINT "Strike any key ...";
930 POKE 764,255:GET #1,K
940 GRAPHICS 0:POKE 82,2:END
950 GOSUB 1400
960 GOTO 510
970 FOR N=1 TO 5
980 PRINT C$(C(N,1),C(N,2));
990 X=INT(2*RND(1)+1)
1000 Y=INT(11*RND(1)+1)
1010 POKE 85,16
1020 PRINT E$(E(X,1),E(X,2));
1030 POKE 85,27
1040 PRINT H$(H(Y,1),H(Y,2))
1050 NEXT N
1060 RETURN
1070 PRINT CHR$(125);M$
1080 POKE 84,5:POKE 752,1
1090 FOR N=1 TO 5
1100 X=INT(2*RND(1)+1)
1110 Y=2:IF X=2 THEN Y=INT(2*RND(1)+1)
1120 PRINT A$(A(N,1),A(N,2));
1130 POKE 85,16
1140 PRINT D$(D(X,1),D(X,2));
```

```
1150 POKE 85,27
1160 PRINT E$(E(Y,1),E(Y,2))
1170 NEXT N
1180 FOR N=1 TO 5
1190 X=INT(2*RND(1)+1)
1200 Y=2:IF X=1 THEN Y=INT(2*RND(1)+1)
1210 PRINT B$(B(N,1),B(N,2));
1220 POKE 85,16
1230 PRINT F$(F(X,1),F(X,2));
1240 IF  NOT (X=1 AND Y=2) THEN 1290
1250 FOR SS=20 TO 10 STEP -1
1260 SOUND 0,SS,10,10
1270 NEXT SS
1280 SOUND 0,0,0,0
1290 POKE 85,27
1300 PRINT G$(G(Y,1),G(Y,2))
1310 NEXT N
1320 RETURN
1330 DATA FRONT DOOR,BACK DOOR,BEDROOM WINDOW,KITCHEN WINDOW
1340 DATA GARAGE DOOR,DISHWASHER,CLOTHES WASHER,CLOTHES DRYER
1350 DATA FURNACE,AIR CONDITIONER,TOILET,TELEPHONE
1360 DATA KITCHEN SINK,CHRISTMAS TREE,FAMILY DOG
1370 DATA OPEN,CLOSED,LOCKED,UNLOCKED,ON,OFF,RUNNING
1380 DATA NOT RUNNING,OK,HOT,COLD,HIGH,LOW,WET,DRY
1390 DATA QUIET,NOISY,SHALLOW,DEEP
1400 FOR SS=1200 TO 900 STEP -10
1410 NEXT SS
1420 RETURN
```

Program 70 SCISSORS-PAPER-STONE

Cut! Cover! Break! We must protect our children from engaging in games that even simulate such violence!

—Editorial in a newspaper dated January 4, 1823

```
10 REM ** PAPER-SCISSORS-STONE **
20 REM
30 DIM M$(80),Y$(40),D$(40),C$(80),R$(80)
40 DIM C(3,2),R(4,2)
50 FOR K=1 TO 10:M$(K)=CHR$(32):NEXT K
60 M$(11)="PAPER-SCISSORS-STONE"
70 M$(31)=CHR$(155)
80 FOR K=1 TO 40:Y$(K)=CHR$(42):NEXT K
90 M$(32)=Y$
100 FOR N=1 TO 3:READ D$
110 X=LEN(D$)-1:C(N,1)=LEN(C$)+1:C(N,2)=C(N,1)+X
120 C$(LEN(C$)+1)=D$
130 NEXT N
140 FOR N=1 TO 4:READ D$
150 X=LEN(D$)-1:R(N,1)=LEN(R$)+1:R(N,2)=R(N,1)+X
160 R$(LEN(R$)+1)=D$
170 NEXT N
```

```
180 POKE 82,0:OPEN #1,4,0,"K:"
190 GRAPHICS 0
200 SETCOLOR 1,8,0:SETCOLOR 2,8,14
210 SETCOLOR 4,4,2
220 CC=0
230 PRINT CHR$(125);M$
240 PRINT "Choose a material (1, 2, OR 3):"
250 PRINT
260 FOR N=1 TO 3
270 POKE 85,5:PRINT N;" - ";
280 PRINT C$(C(N,1),C(N,2))
290 NEXT N
300 GET #1,K
310 IF K<49 OR K>51 THEN 300
320 PN=K-48
330 SN=INT(3*RND(1)+1)
340 POSITION 0,12
350 PRINT Y$
360 PRINT "You picked ";C$(C(PN,1),C(PN,2))
370 PRINT "The computer picks ";C$(C(SN,1),C(SN,2))
380 PRINT :FOR T=1 TO 250:NEXT T
390 ON SN GOTO 400,430,460
400 IF PN=1 THEN PRINT R$(R(1,1),R(1,2));:GOTO 600
410 IF PN=2 THEN PRINT R$(R(3,1),R(3,2));:GOTO 490
420 IF PN=3 THEN PRINT R$(R(2,1),R(2,2));:GOTO 550
430 IF PN=1 THEN PRINT R$(R(3,1),R(3,2));:GOTO 550
440 IF PN=2 THEN PRINT R$(R(1,1),R(1,2));:GOTO 600
450 IF PN=3 THEN PRINT R$(R(4,1),R(4,2));:GOTO 490
460 IF PN=1 THEN PRINT R$(R(2,1),R(2,2));:GOTO 490
470 IF PN=2 THEN PRINT R$(R(4,1),R(4,2));:GOTO 550
480 IF PN=3 THEN PRINT R$(R(1,1),R(1,2));:GOTO 600
490 PRINT " - You Win.":PC=PC+1
500 FOR SN=1 TO 8:FOR SS=40 TO 10 STEP -1
510 SOUND 0,SS,10,10
520 NEXT SS:NEXT SN
530 SOUND 0,0,0,0
540 GOTO 600
550 PRINT " - Computer Wins.":CC=CC+1
560 FOR SS=1 TO 80
570 SOUND 0,SS,10,10
580 NEXT SS
590 SOUND 0,0,0,0
600 POSITION 0,20
610 PRINT "Strike the SPACE BAR to do again"
620 PRINT "(or the X key to end the game) ...";
630 GET #1,K
640 IF K=88 OR K=120 THEN 670
650 IF K=32 THEN 230
660 GOTO 630
670 PRINT CHR$(125);M$
680 POKE 752,1
690 PRINT "You won ";PC;" time";
700 IF PC<>1 THEN PRINT "s";
710 PRINT :PRINT "The computer won ";CC;" time";
720 IF CC<>1 THEN PRINT "s"
730 POSITION 0,20
```

```
740 POKE 752,0
750 PRINT "Strike any key ...";
760 GET #1,K
770 POKE 82,2:GRAPHICS 0:END
780 DATA Paper,Scissors,Stone
790 DATA TIE,Paper COVERS Stone
800 DATA Scissors CUT Paper,Stone SMASHES Scissors
```

Program 71 HELP-HELP

Facts require explanation; truth defies it.

—Anonymous

User's Note: It's up to you to decide whether this seemingly innocent program requires explanation or defies it.

```
10 REM ** HELP,HELP **
20 REM
30 DIM M$(80)
40 FOR K=1 TO 18:M$(K)=CHR$(32):NEXT K
50 M$(19)="HELP":M$(23)=CHR$(155)
60 FOR K=1 TO 40:M$(23+K)=CHR$(4):NEXT K
70 OPEN #1,4,0,"K:"
80 POKE 82,0:GRAPHICS 0
90 PRINT CHR$(125);M$
100 FOR K=1 TO 66
110 IF K=13 THEN GOSUB 290
120 FOR SS=20 TO 5 STEP -1
130 SOUND 1,ABS(SS-10),10,ABS(SS-10)
140 NEXT SS
150 SOUND 1,0,0,0
160 READ L:PRINT CHR$(L+128);
170 NEXT K
180 GOSUB 290
190 POSITION 0,20
200 PRINT "Strike any key ... ";
210 GET #1,K
220 POKE 82,2:GRAPHICS 0:END
230 DATA 72,69,76,80,44,32,72,69,76,80,33,33
240 DATA 32,73,39,77,32,65,32,80,82,73,83,79,78
250 DATA 69,82,32,73,78,32,65,32,80,73,67
260 DATA 84,85,82,69,45,84,85,66,69,32,70,65,67
270 DATA 84,79,82,89,46,32,76,69,84,32,77,69
280 DATA 32,79,85,84,33
290 FOR SN=1 TO 2:FOR SS=1 TO 50
300 SOUND 0,SS,10,10:NEXT SS
310 SOUND 0,0,0,0
320 FOR SD=1 TO 50:NEXT SD
330 NEXT SN
340 RETURN
```

Program 72 WUMPUS

Stand still, you wascle wabbit!

—Elmer Fudd

```
10 REM ** WUMPUS **
20 REM
30 DIM M$(80),X$(40),Y$(40),M1$(40)
40 DIM XX$(20)
50 OPEN #1,4,0,"K:"
60 FOR K=1 TO 40
70 X$(K)=CHR$(32):Y$(K)=CHR$(58)
80 NEXT K
90 X$=X$(1,17)
100 M$=X$:M$(18)="WUMPUS"
110 M$(24)=CHR$(155):M$(25)=Y$
120 POKE 82,0:GRAPHICS 0
130 PRINT CHR$(125);M$
140 PRINT "Wumpus is a hunting game whereby you"
150 PRINT "attempt to capture a strange sort of"
160 PRINT "beast -- namely, a wumpus."
170 PRINT :PRINT "You have a high-tech rangefinder to"
180 PRINT "determine how far away the wumpus is."
190 PRINT "You have to use your hunters' instinct,"
200 PRINT "however, to reckon the direction."
210 PRINT :PRINT "Catch the wumpus -- IF YOU CAN."
220 POSITION 0,20
230 PRINT "Strike any key to begin ...";
240 GOSUB 890
250 GET #1,K
260 N=0
270 WX=INT(100*RND(1)-50)
280 WY=INT(100*RND(1)-50)
290 PX=0:PY=0
300 SETCOLOR 1,12,2:SETCOLOR 2,12,14
310 PRINT CHR$(125);M$
320 POSITION 0,4
330 DI=SQR((WX-PX)*(WX-PX)+(WY-PY)*(WY-PY))
340 DI=INT(DI)
350 IF DI>1 THEN 510
360 PRINT CHR$(125);M$
370 POSITION 0,4
380 M1$="You have CAPTURED the wumpus."
390 FOR K=1 TO 4:GOSUB 960:NEXT K
400 POKE 752,1
410 PRINT M1$
420 FOR XN=1 TO 4
430 NEXT XN
440 FOR T=1 TO 500:NEXT T
450 PRINT CHR$(125);M$:PRINT M1$
460 POKE 752,0
470 PRINT :PRINT "You did it in ";N;" move";
480 IF N<>1 THEN PRINT "s."
490 FOR K=1 TO N:GOSUB 890:NEXT K
500 GOTO 730
```

```
510 PRINT "You are now ";DI;" miles from the Wumpus."
520 GOSUB 890
530 PRINT
540 PRINT "How far would you like to travel";
550 GOSUB 810:TD=XX
560 PRINT
570 PRINT "Which direction (N,S,E,W)?";
580 PRINT CHR$(160):POKE 752,1
590 POSITION 0,20
600 PRINT "Strike the X key to give up"
610 GOSUB 890
620 GET #1,D
630 POKE 752,0
640 IF D>90 THEN D=D-32
650 IF D=78 THEN PY=PY+DI:GOTO 710
660 IF D=83 THEN PY=PY-DI:GOTO 710
670 IF D=69 THEN PX=PX+DI:GOTO 710
680 IF D=87 THEN PX=PX-DI:GOTO 710
690 IF D=88 THEN 790
700 GOTO 570
710 N=N+1
720 GOTO 310
730 POSITION 0,20
740 PRINT "Strike the SPACE BAR to play again"
750 PRINT "(or the X key to end the program)... ";
760 GET #1,K
770 IF K=32 THEN 260
780 IF  NOT (K=88 OR K=120) THEN 760
790 POKE 82,2:GRAPHICS 0
800 END
810 INPUT XX$
820 IF LEN(XX$)=0 THEN 850
830 FOR NX=1 TO LEN(XX$)
840 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 860
850 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 810
860 NEXT NX
870 XX=VAL(XX$)
880 RETURN
890 FOR SS=14 TO 0 STEP -2
900 SOUND 0,30,10,SS
910 SOUND 1,10,10,SS
920 FOR SX=1 TO 10:NEXT SX
930 NEXT SS
940 SOUND 0,0,0,0:SOUND 1,0,0,0
950 RETURN
960 FOR SS=1 TO 50
970 SOUND 0,SS,10,10
980 NEXT SS
990 SOUND 0,0,0,0
1000 RETURN
```

Program 73 SUPER WUMPUS

Eh-h-h. Catch me if you can!

—Bugs Bunny

```
10 REM ** SUPER WUMPUS **
20 REM
30 DIM M$(80),X$(40),Y$(40),M1$(40)
40 DIM XX$(20)
50 OPEN #1,4,0,"K:"
60 FOR K=1 TO 40
70 X$(K)=CHR$(32):Y$(K)=CHR$(58)
80 NEXT K
90 X$=X$(1,12)
100 M$=X$:M$(13)="SUPER WUMPUS"
110 M$(25)=CHR$(155):M$(26)=Y$
120 POKE 82,0:GRAPHICS 0
130 PRINT CHR$(125);M$
140 PRINT "Wumpus is a hunting game whereby you"
150 PRINT "attempt to capture a strange sort of"
160 PRINT "beast -- namely, a wumpus."
170 PRINT :PRINT "You have a high-tech rangefinder to"
180 PRINT "determine how far away the wumpus is."
190 PRINT "You have to use your hunters' instinct,"
200 PRINT "however, to reckon the direction."
210 PRINT
220 PRINT "NOTICE: This SUPER Wumpus is a little"
230 PRINT "harder to catch than the other wumpus"
240 PRINT "because he moves around in his world"
250 PRINT
260 PRINT "Catch SUPER Wumpus -- if you can!"
270 POSITION 0,20
280 PRINT "Strike any key to begin ...";
290 GOSUB 940
300 GET #1,K
310 N=0
320 WX=INT(100*RND(1)-50)
330 WY=INT(100*RND(1)-50)
340 PX=0:PY=0
350 SETCOLOR 1,12,2:SETCOLOR 2,12,14
360 PRINT CHR$(125);M$
370 POSITION 0,4
380 DI=SQR((WX-PX)*(WX-PX)+(WY-PY)*(WY-PY))
390 DI=INT(DI)
400 IF DI>1 THEN 560
410 PRINT CHR$(125);M$
420 POSITION 0,4
430 M1$="You have CAPTURED the wumpus."
440 FOR K=1 TO 4:GOSUB 1010:NEXT K
450 POKE 752,1
460 PRINT M1$
470 FOR XN=1 TO 4
480 NEXT XN
490 FOR T=1 TO 500:NEXT T
```

```
500 PRINT CHR$(125);M$:PRINT M1$
510 POKE 752,0
520 PRINT :PRINT "You did it in ";N;" move";
530 IF N<>1 THEN PRINT "s."
540 FOR K=1 TO N:GOSUB 940:NEXT K
550 GOTO 780
560 PRINT "You are now ";DI;" miles from the Wumpus."
570 GOSUB 940
580 PRINT
590 PRINT "How far would you like to travel";
600 GOSUB 860:TD=XX
610 PRINT
620 PRINT "Which direction (N,S,E,W)?";
630 PRINT CHR$(160):POKE 752,1
640 POSITION 0,20
650 PRINT "Strike the X key to give up"
660 GOSUB 940
670 GET #1,D
680 POKE 752,0
690 IF D>90 THEN D=D-32
700 IF D=78 THEN PY=PY+DI:GOTO 760
710 IF D=83 THEN PY=PY-DI:GOTO 760
720 IF D=69 THEN PX=PX+DI:GOTO 760
730 IF D=87 THEN PX=PX-DI:GOTO 760
740 IF D=88 THEN 840
750 GOTO 620
760 N=N+1
770 GOTO 320
780 POSITION 0,20
790 PRINT "Strike the SPACE BAR to play again"
800 PRINT "(or the X key to end the program)... ";
810 GET #1,K
820 IF K=32 THEN 310
830 IF  NOT (K=88 OR K=120) THEN 810
840 POKE 82,2:GRAPHICS 0
850 END
860 INPUT XX$
870 IF LEN(XX$)=0 THEN 900
880 FOR NX=1 TO LEN(XX$)
890 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 910
900 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 860
910 NEXT NX
920 XX=VAL(XX$)
930 RETURN
940 FOR SS=14 TO 0 STEP -2
950 SOUND 0,30,10,SS
960 SOUND 1,10,10,SS
970 FOR SX=1 TO 10:NEXT SX
980 NEXT SS
990 SOUND 0,0,0,0:SOUND 1,0,0,0
1000 RETURN
1010 FOR SS=1 TO 50
1020 SOUND 0,SS,10,10
1030 NEXT SS
1040 SOUND 0,0,0,0
1050 RETURN
```

Program 74 CROSS THE RIVER

There's more than one way to skin a cat, mash a spider, and spit in the river; and you only gotta be smart to do two of 'em.

—From *Forgotten Lore of the Mississippi*

```
10 REM ** RIVER CROSSING **
20 REM
30 DIM M$(80),R$(40),D$(80),D(7,2)
40 DIM FB$(40),Y$(40),CL$(40)
50 FOR K=1 TO 13:M$(K)=CHR$(32):NEXT K
60 M$(14)="RIVER CROSSING"
70 M$(28)=CHR$(155)
80 FOR K=1 TO 40
90 Y$(K)=CHR$(10):CL$(K)=CHR$(32)
100 NEXT K
110 M$(29)=Y$
120 FOR K=1 TO 7:READ R$
130 X=LEN(R$)-1:D(K,1)=LEN(D$)+1:D(K,2)=D(K,1)+X
140 D$(LEN(D$)+1)=R$
150 NEXT K
160 POKE 82,0:OPEN #1,4,0,"K:"
170 GRAPHICS 0
180 PRINT CHR$(125);M$
190 PRINT "Consider this problem in logic:":PRINT
200 PRINT "You are on the North bank of a river."
210 PRINT "You have a boat,wolf,head of cabbage"
220 PRINT "and a goat with you. When you aren't"
230 PRINT "around, the goat will eat the cabbage"
240 PRINT "and the wolf will eat the goat."
250 PRINT
260 PRINT "Your task is to use the boat to carry"
270 PRINT "The wolf,cabbage and goat to the"
280 PRINT "South bank -- carrying just one (or"
290 PRINT "none) with you on each crossing."
300 PRINT :PRINT "Let me know if you can do it in less"
305 PRINT "than 7 crossings."
310 POSITION 0,20
320 PRINT "Strike any key to begin ...";
330 GET #1,K
340 GT=1:HC=1:WF=1:LF=1:NC=0
350 FB$=D$(1)
360 FB=1
370 PRINT CHR$(125);M$
380 IF FB=1 THEN FB$=D$(D(1,1),D(1,2))
390 IF FB=2 THEN FB$=D$(D(2,1),D(2,2))
400 POKE 752,1:POSITION 0,3
410 PRINT "Items on the North bank:":PRINT
420 IF WF=1 THEN POKE 85,5:PRINT D$(D(3,1),D(3,2))
430 IF HC=1 THEN POKE 85,5:PRINT D$(D(4,1),D(4,2))
440 IF GT=1 THEN POKE 85,5:PRINT D$(D(5,1),D(5,2))
450 PRINT :PRINT "Items on the South bank:":PRINT
```

```
460 IF WF=2 THEN POKE 85,5:PRINT D$(D(3,1),D(3,2))
470 IF HC=2 THEN POKE 85,5:PRINT D$(D(4,1),D(4,2))
480 IF GT=2 THEN POKE 85,5:PRINT D$(D(5,1),D(5,2))
490 POSITION 0,15
500 PRINT "You are on the ";FB$;" bank."
510 POSITION 0,17:PRINT Y$
520 ON LF GOTO 530,780,840,850
530 POKE 752,0
540 PRINT "Do you want to take the (G)oat, (W)olf,"
550 PRINT "The (C)abbage, or go (A)lone?";
560 GET #1,KK
570 IF KK>90 THEN K$=CHR$(KK-32)
580 POSITION 0,14:PRINT CL$(1,39);
590 NC=NC+1
600 IF KK<>71 THEN 640
610 IF GT<>FB THEN 960
620 GT=GT+1:IF GT>2 THEN GT=1
630 GOTO 730
640 IF KK<>87 THEN 680
650 IF WF<>FB THEN 960
660 WF=WF+1:IF WF>2 THEN WF=1
670 GOTO 730
680 IF KK<>67 THEN 720
690 IF HC<>FB THEN 960
700 HC=HC+1:IF HC>2 THEN HC=1
710 GOTO 730
720 IF KK<>65 THEN 370
730 FB=FB+1:IF FB>2 THEN FB=1
740 IF HC=2 AND WF=2 AND GT=2 THEN LF=2
750 IF GT=WF AND FB<>GT THEN LF=3
760 IF GT=HC AND FB<>GT THEN LF=4
770 GOTO 370
780 FOR N=1 TO 6:FOR SS=14 TO 0 STEP -2
790 SOUND 0,20,10,SS
800 NEXT SS
810 SOUND 0,0,0,0
820 NEXT N
830 PRINT "You did it in ";NC;" crossings!":GOTO 900
840 PRINT D$(D(6,1),D(6,2)):GOTO 860
850 PRINT D$(D(7,1),D(7,2))
860 FOR NS=1 TO 8:FOR SS=40 TO 10 STEP -1
870 SOUND 0,SS,10,10
880 NEXT SS:NEXT NS
890 SOUND 0,0,0,0
900 POKE 752,0
910 PRINT :PRINT "Would you like to play again (Y/N)?";
920 GET #1,K
930 IF K=89 OR K=121 THEN 340
940 IF  NOT (K=78 OR K=110) THEN 920
950 POKE 82,2:GRAPHICS 0:END
960 PRINT CHR$(253);
970 POSITION 4,14
980 PRINT "That's not possible";
```

```
990 GOTO 490
1000 DATA North,South,Wolf,Cabbage,Goat
1010 DATA The wolf ate the goat.
1020 DATA The goat ate the cabbage.
```

Program 75 FOOTBALL

Turn out the lights, the party's over . . .

—ABC's Don Meredith (variation of an older theme)

```
10 REM ** FOOTBALL **
20 REM
30 DIM M$(80),S1$(30),S2$(30),CL$(40)
40 S1$="The ball is on the comp's"
50 S2$="The ball is on your"
60 FOR K=1 TO 40:CL$(K)=CHR$(32):NEXT K
70 M$=CL$(1,16):M$(17)="FOOTBALL"
80 M$(25)=CHR$(155)
90 FOR K=1 TO 40:M$(25+K)=CHR$(42):NEXT K
100 POKE 82,0
110 OPEN #1,4,0,"K:"
120 GRAPHICS 0:PRINT CHR$(125);M$
130 PRINT "You are the head coach of a profession-"
140 PRINT "al football team. Your opponent's"
150 PRINT "coach is your computer.":PRINT
160 PRINT "When either of you have the ball, you"
170 PRINT "have the options of running, passing or"
180 PRINT "kicking the ball. (A kick may be a punt"
190 PRINT "or field goal attempt.)"
200 POSITION 0,20
210 GOSUB 1480
220 PRINT "Strike any key to begin the game ...";
230 GET #1,K
240 PRINT CHR$(125);M$
250 GOSUB 1540
260 FOR T=1 TO 100:NEXT T
270 FOR N=1 TO 2:GOSUB 1480:NEXT N
280 PRINT "And now for the toss of the coin:":PRINT
290 PRINT "You call it -- (H)EADS or (T)AILS ";
300 GET #1,K
310 GOSUB 1620
320 IF INT(2*RND(1))=1 THEN 350
330 POSITION 0,7
340 IF K=82 OR K=114 THEN FL=0:GOTO 460
350 POSITION 0,7
360 PRINT "The computer won the toss, and"
370 PRINT "elects to receive."
380 FL=1:POKE 752,1
390 FOR T=1 TO 1000:NEXT T
400 GOTO 460
410 PRINT "Do you want to (K)ICK or (R)ECEIVE? ";
```

```
420 FL=1:POKE 752,1
430 GET #1,K
440 IF K$="R" OR K$="r" THEN FL=0:GOTO 460
450 IF  NOT (K=75 OR K=107) THEN 430
460 PS=0:CS=0:DN=1:YD=20
470 YG=10:YL=20
480 TL=60
490 IF TL<0 THEN 1200
500 FOR DN=1 TO 4
510 TL=TL-1
520 PRINT CHR$(125);M$
530 POKE 85,12:PRINT "SCOREBOARD"
540 PRINT
550 PRINT "You have ";PS;" pts";
560 PRINT CL$(1,6);"Computer has ";CS;" pts"
570 PRINT :POKE 85,4
580 PRINT "Down=";DN;CL$(1,12);
590 PRINT "Yds to go=";YG
600 PRINT
610 IF FL=1 THEN POKE 752,1:GOTO 650
620 IF YL>50 THEN R=100-YL:PRINT S1$;CHR$(32);R;" Yardline"
630 IF YL<=50 THEN PRINT S2$;CHR$(32);YL;" Yardline"
640 GOTO 670
650 IF YL>50 THEN R=100-YL:PRINT S2$;CHR$(32);R;" Yardline"
660 IF YL<=50 THEN PRINT S1$;CHR$(32);YL;" Yardline"
670 PRINT :POKE 85,5
680 PRINT "Time remaining=";TL;" minutes"
690 IF TL<=0 THEN GOTO 1200
700 PRINT
710 IF FL=0 THEN PRINT "You have the ball":GOSUB 1540:POKE 752,0
720 IF FL=1 THEN PRINT "The computer has the ball":POKE 752,1:GOTO 930
730 PRINT
740 PRINT "Do you wish to (P)ASS, (R)UN, (K)ick"
750 PRINT "or (Q)uit the game?"
760 GET #1,K
770 IF K=81 OR K=113 THEN 1200
780 IF K=80 OR K=112 THEN MY=INT(RND(1)*40-15):GOTO 840
790 IF K=82 OR K=114 THEN MY=INT(RND(1)*30-10):GOTO 840
800 IF  NOT (K=75 OR K=107) THEN 760
810 MY=INT(RND(1)*20+40)
820 YL=YL+MY:IF YL>100 THEN 1030
830 GOTO 1180
840 YL=YL+MY:YG=YG-MY
850 IF YL>100 THEN 1110
860 IF YG<=0 THEN 910
870 IF YL<0 THEN 1400
880 NEXT DN:FL=FL+1
890 YL=100-YL
900 IF FL=2 THEN FL=0:GOSUB 1480:GOSUB 1540:POKE 752,0
910 YG=10:DN=1
920 GOTO 490
930 IF DN<4 THEN 1010
940 PRINT
950 PRINT "*** The computer tries a kick ***"
960 FOR SS=10 TO 40
```

```
970 SOUND 0,SS,10,14-SS/10
980 FOR ST=1 TO 10:NEXT ST
990 NEXT SS:SOUND 0,0,0,0
1000 K=75:GOTO 790
1010 FOR T=1 TO 500:NEXT T
1020 K=82:GOTO 790
1030 PRINT CHR$(125);M$:PRINT
1040 PRINT
1050 PRINT "The kicker scored a FIELD GOAL"
1060 GOSUB 1480:GOSUB 1540
1070 IF FL=0 THEN PS=PS+3
1080 IF FL=1 THEN CS=CS+3
1090 FOR T=1 TO 1000:NEXT T
1100 GOTO 1180
1110 PRINT CHR$(125);M$:PRINT
1120 POKE 85,12
1130 PRINT " ***TOUCH-DOWN***"
1140 GOSUB 1480:GOSUB 1540
1150 IF FL=0 THEN PS=PS+7
1160 IF FL=1 THEN CS=CS+7
1170 FOR T=1 TO 1000:NEXT T
1180 FL=FL+1:YL=20
1190 GOTO 900
1200 PRINT CHR$(125);M$
1210 FOR T=1 TO 300:NEXT T
1220 PRINT
1230 POKE 85,8
1240 GOSUB 1480
1250 PRINT " *** THE GAME IS OVER ***"
1260 GOSUB 1540
1270 PRINT
1280 PRINT "The final score is:"
1290 PRINT :PRINT "Computer-";CS
1300 PRINT :PRINT "You-";PS
1310 IF CS>PS THEN PRINT :PRINT "Computer wins"
1320 IF CS<PS THEN PRINT :PRINT "You win"
1330 IF CS=PS THEN PRINT "Its a tie game"
1340 PRINT
1350 PRINT "Want to play again (Y/N)? ";
1360 GET #1,K
1370 IF K=89 OR K=121 THEN 240
1380 IF  NOT (K=78 OR K=110) THEN 1360
1390 POKE 82,2:GRAPHICS 0:END
1400 PRINT CHR$(125);M$:PRINT
1410 PRINT "The ball is downed in the end zone ..."
1420 PRINT :PRINT "* SAFETY *"
1430 IF FL=0 THEN CS=CS+2
1440 IF FL=1 THEN PS=PS+2
1450 FOR T=1 TO 800:NEXT T
1460 FL=FL+1:YL=20
1470 GOTO 900
1480 FOR SN=1 TO 15
1490 SOUND 0,10,10,10
1500 FOR ST=1 TO 3:NEXT ST
1510 SOUND 0,0,0,0
1520 NEXT SN
```

```
1530 RETURN
1540 FOR SS=14 TO 0 STEP -2
1550 SOUND 0,10,8,SS
1560 FOR ST=1 TO 20
1570 SOUND 1,INT(20*RND(1)+5),8,SS
1580 NEXT ST
1590 NEXT SS
1600 SOUND 0,0,0,0:SOUND 1,0,0,0
1610 RETURN
1620 FOR NS=1 TO 15
1630 FOR SS=10 TO 0 STEP -2
1640 SOUND 0,2*SS,8,ABS(SS-5)
1650 NEXT SS
1660 NEXT NS
1670 FOR SS=10 TO 0 STEP -2
1680 SOUND 0,10*SS,10,SS
1690 NEXT SS
1700 SOUND 0,0,0,0
1710 RETURN
```

Program 76 SHELL GAME

If you can do this, you're pretty good.

—Overheard in a bar in Tiajuana

```
10 REM ** SHELL GAME **
20 REM
30 DIM M$(80)
40 POKE 82,0:OPEN #1,4,0,"K:"
50 FOR K=1 TO 15:M$(K)=CHR$(32):NEXT K
60 M$(16)="SHELL GAME":M$(26)=CHR$(155)
70 FOR K=1 TO 40:M$(26+K)=CHR$(42):NEXT K
80 GRAPHICS 0:PRINT M$
90 SETCOLOR 2,15,0:SETCOLOR 1,15,15
100 SETCOLOR 4,13,4
110 PRINT "THIS IS A COMPUTERIZED VERSION OF THE"
120 PRINT "OLD SHELL GAME. IT PROVES THAT"
130 PRINT "THE HAND IS QUICKER THAN THE EYE."
140 POSITION 0,21
150 PRINT "STRIKE ANY KEY TO BEGIN ...";
160 GET #1,K
170 RG=0:WG=0
180 PRINT CHR$(125);M$
190 SETCOLOR 2,0,15:SETCOLOR 1,0,0
200 SETCOLOR 4,7,4
210 SN=INT(RND(1)*3)+1
220 POKE 752,1
230 POSITION 0,7
240 PRINT "THE PEA IS UNDER THIS SHELL ...";
250 POSITION 15,10:PRINT "O O O";
260 GOSUB 720
```

```
270 POSITION 0,7
280 PRINT "WATCH THE SHELLS ...";
290 FOR G=1 TO 15:PRINT CHR$(32);:NEXT G
300 GOSUB 760
310 POSITION 0,13
320 GOSUB 1120
330 POKE 752,0
340 PRINT "WHICH SHELL IS THE PEA UNDER (1-3)? ";
350 GET #1,G
360 IF G<ASC("1") OR G>ASC("3") THEN 350
370 G=G-48
380 IF G<>SN THEN 480
390 PRINT
400 FOR N=1 TO 4:FOR SN=30 TO 10 STEP -1
410 SOUND 1,SN,10,10
420 NEXT SN:NEXT N
430 SOUND 1,0,0,0
440 POKE 85,8
450 PRINT "*** YOU'RE RIGHT ***"
460 RG=RG+1
470 GOTO 520
480 PRINT
490 PRINT "SORRY, THE PEA IS UNDER ";SN
500 WG=WG+1
510 FOR X=1 TO 2:PRINT CHR$(253):NEXT X
520 POSITION 0,21
530 PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y/N)? ";
540 GET #1,K
550 IF K=89 OR K=121 THEN 180
560 IF  NOT (K=78 OR K=110) THEN 540
570 PRINT CHR$(125);M$
580 PRINT CHR$(127);
590 PRINT "YOU HAVE ";RG;" CORRECT GUESS";
600 IF RG<>1 THEN PRINT "ES";
610 PRINT
620 PRINT CHR$(127);CHR$(127);"AND"
630 PRINT CHR$(127);
640 PRINT "YOU HAVE ";WG;" WRONG GUESS";
650 IF WG<>1 THEN PRINT "ES";
660 PRINT :PRINT
670 PRINT "HAVE A NICE DAY ..."
680 POSITION 0,21
690 PRINT "STRIKE ANY KEY ...";
700 POKE 764,255:GET #1,K
710 POKE 82,2:GRAPHICS 0:END
720 POSITION 2*INT(RND(1)*3)+15,10
730 PRINT CHR$(207);
740 FOR T=1 TO 500:NEXT T
750 RETURN
760 FOR N=1 TO INT(RND(1)*15+15)
770 POSITION 17,10:PRINT CHR$(32);
780 POSITION 17,9:PRINT "O";
790 H=RND(1)
800 IF H<0.5 THEN GOSUB 840
810 IF H>0.5 THEN GOSUB 970
820 NEXT N
```

```
830 RETURN
840 FOR K=17 TO 21
850 POSITION K,9:PRINT "O";
860 GOSUB 1080
870 POSITION K,9:PRINT CHR$(32);
880 NEXT K
890 POSITION 21,10:PRINT "O";
900 GOSUB 1080
910 POSITION 18,10
920 PRINT "O O ";
930 GOSUB 1080
940 POSITION 17,10
950 PRINT "O O ";
960 RETURN
970 FOR K=17 TO 13 STEP -1
980 POSITION K,9:PRINT "O";
990 POSITION K,9:PRINT CHR$(32)
1000 NEXT K
1010 POSITION 13,10:PRINT "O";
1020 POSITION 13,10
1030 PRINT " O O";
1040 GOSUB 1080
1050 POSITION 14,10
1060 PRINT " O O";
1070 RETURN
1080 FOR T=3 TO 0 STEP -1
1090 SOUND 0,30,10,T*5
1100 NEXT T
1110 RETURN
1120 FOR T=15 TO 0 STEP -0.5
1130 SOUND 0,90,10,T:SOUND 1,40,10,T
1140 NEXT T
1150 RETURN
```

Program 77 FAIR SHELL GAME

He who gives, giveth. He who takes, taketh away.

—15th Century English proverb

The Shell Game in Program 76 is a perfectly honest one. This version is . . . well, not so honest. It sort of lets you win more than your fair share of shell games. When the computer asks you to enter your name, just remember to type one space before striking the space bar. The computer uses that space at the end of your name to identify you and load matters in your favor.

```
10 REM ** FAIR SHELL GAME **
20 REM
30 DIM M$(80),L$(40),P$(120)
40 DIM P(2,2),X$(40),CL$(40),RG(2)
50 POKE 82,0:OPEN #1,4,0,"K:"
```

```
60 FOR K=1 TO 15:M$(K)=CHR$(32):NEXT K
70 M$(16)="SHELL GAME":M$(26)=CHR$(155)
80 FOR K=1 TO 40
90 L$="*":M$(K+26)="*":CL$(K)=CHR$(32)
100 NEXT K
110 GRAPHICS 0:PRINT M$
120 SETCOLOR 2,15,0:SETCOLOR 1,15,15
130 SETCOLOR 4,13,4
140 PRINT "THIS IS A COMPUTERIZED VERSION OF THE"
150 PRINT "OLD SHELL GAME. IT PROVES THAT"
160 PRINT "THE HAND IS QUICKER THAN THE EYE."
170 PRINT :PRINT
180 PRINT "THIS ONE IS FOR TWO PLAYERS, AND IT"
190 PRINT "ENCOURAGES A BIT OF WAGERING ON THE"
200 PRINT "SIDE."
210 POSITION 0,21
220 PRINT "STRIKE ANY KEY TO BEGIN ...";
230 GET #1,K
240 NP=2:RG(0)=0:RG(1)=0
250 PRINT CHR$(125);M$
260 GOSUB 1340
270 PRINT CHR$(125);M$
280 SETCOLOR 2,0,15:SETCOLOR 1,0,0
290 SETCOLOR 4,7,4
300 PF=PF+1:IF PF>2 THEN PF=1
310 SN=INT(RND(1)*3)+1
320 POKE 752,1
330 POSITION 0,7
340 PRINT "HERE IS THE PEA, ";
350 PRINT P$(P(PF,1),P(PF,2))
360 POSITION 15,10:PRINT "O O O";
370 GOSUB 900
380 POSITION 0,7
390 PRINT "WATCH THE SHELLS, ";
400 PRINT P$(P(PF,1),P(PF,2))
410 FOR G=1 TO 15:PRINT CHR$(32);:NEXT G
420 GOSUB 940
430 POSITION 0,13
440 GOSUB 1300
450 PRINT P$(P(PF,1),P(PF,2))
460 POKE 752,0
470 PRINT "WHERE IS THE PEA (1-3)?";
480 GET #1,G
490 IF G<ASC("1") OR G>ASC("3") THEN 480
500 G=G-48:PRINT G
510 X$=P$(P(PF,1),P(PF,2))
520 IF X$(LEN(X$))<>CHR$(32) THEN 540
530 IF INT(4*RND(1))>0 THEN SN=G
540 IF G<>SN THEN 640
550 FOR X=1 TO 4:FOR SS=40 TO 10 STEP -1
560 SOUND 0,SS,10,10
570 NEXT SS:NEXT X
580 SOUND 0,0,0,0
590 PRINT
600 PRINT "YOU'RE RIGHT, ";
610 PRINT P$(P(PF,1),P(PF,2))
```

```
620 RG(PF)=RG(PF)+1
630 GOTO 690
640 PRINT
650 PRINT "YOU WERE WRONG, ";
660 PRINT P$(P(PF,1),P(PF,2))
670 PRINT "THE PEA IS UNDER ";SN;CHR$(46)
680 FOR X=1 TO 2:PRINT CHR$(253):NEXT X
690 FOR T=1 TO 500:NEXT T
700 IF PF<>2 THEN 270
710 POSITION 0,21
720 PRINT "YOU TWO WANT TO PLAY AGAIN (Y/N)?";
730 GET #1,K
740 IF K=89 OR K=121 THEN 270
750 IF  NOT (K=78 OR K=110) THEN 730
760 PRINT CHR$(125);M$:PRINT
770 FOR N=1 TO 2
780 POKE 85,5:PRINT P$(P(N,1),P(N,2))
790 POKE 85,5:PRINT RG(N);CHR$(32);
800 PRINT "CORRECT GUESS";
810 IF RG(N)<>1 THEN PRINT "ES";
820 PRINT :PRINT
830 NEXT N
840 PRINT :PRINT
850 PRINT "HAVE A NICE DAY ..."
860 POSITION 0,20
870 PRINT "STRIKE ANY KEY ...";
880 POKE 764,255:GET #1,G
890 POKE 82,2:GRAPHICS 0:END
900 POSITION 2*INT(RND(1)*3)+15,10
910 PRINT CHR$(207);
920 FOR T=1 TO 500:NEXT T
930 RETURN
940 FOR N=1 TO INT(RND(1)*15+15)
950 POSITION 17,10:PRINT CHR$(32);
960 POSITION 17,9:PRINT "O";
970 H=RND(1)
980 IF H<0.5 THEN GOSUB 1020
990 IF H>0.5 THEN GOSUB 1150
1000 NEXT N
1010 RETURN
1020 FOR K=17 TO 21
1030 POSITION K,9:PRINT "O";
1040 GOSUB 1260
1050 POSITION K,9:PRINT CHR$(32);
1060 NEXT K
1070 POSITION 21,10:PRINT "O";
1080 GOSUB 1260
1090 POSITION 18,10
1100 PRINT "O O ";
1110 GOSUB 1260
1120 POSITION 17,10
1130 PRINT "O O ";
1140 RETURN
1150 FOR K=17 TO 13 STEP -1
1160 POSITION K,9:PRINT "O";
1170 POSITION K,9:PRINT CHR$(32)
```

```
1180 NEXT K
1190 POSITION 13,10:PRINT "O";
1200 POSITION 13,10
1210 PRINT " O O";
1220 GOSUB 1260
1230 POSITION 14,10
1240 PRINT " O O";
1250 RETURN
1260 FOR T=3 TO 0 STEP -1
1270 SOUND 0,30,10,T*5
1280 NEXT T
1290 RETURN
1300 FOR T=15 TO 0 STEP -0.5
1310 SOUND 0,90,10,T:SOUND 1,40,10,T
1320 NEXT T
1330 RETURN
1340 FOR N=1 TO NP
1350 CV=2*N+6
1360 X$=""
1370 POSITION 0,CV
1380 PRINT "Player #";N;", enter your first name:"
1390 PRINT CL$(1,39);:POKE 85,0:PRINT " ";
1400 GET #1,K
1410 IF K=155 THEN 1480
1420 PRINT CHR$(K);
1430 IF  NOT (K=126 OR K=156) THEN 1460
1440 IF LEN(X$)<=1 THEN X$="":GOTO 1400
1450 X$=X$(1,LEN(X$)-1):GOTO 1400
1460 X$(LEN(X$)+1)=CHR$(K)
1470 GOTO 1400
1480 IF LEN(X$)>2 AND LEN(X$)<12 THEN 1510
1490 PRINT
1500 PRINT "Aww, get serious!":GOTO 1360
1510 X=LEN(X$)-1
1520 P(N,1)=LEN(P$)+1:P(N,2)=P(N,1)+X
1530 P$(LEN(P$)+1)=X$
1540 NEXT N
1550 RETURN
```

Program 78 RUSSIAN ROULETTE

Heck, if you can count to six you can play Russian Roulette

—From the epitath of E. Ross Bennington

```
10 REM ** RUSSIAN ROULETTE **
20 REM
30 DIM M$(80),CL$(40),NA$(200),X$(40)
40 DIM N(5,2),NP$(1)
50 FOR K=1 TO 40
60 X$(K)=CHR$(42):CL$(K)=CHR$(32)
70 NEXT K
80 M$=CL$(1,11):M$(12)="RUSSIAN ROULETTE"
```

```
90 M$(28)=CHR$(155):M$(29)=X$
100 POKE 82,0:OPEN #1,4,0,"K:"
110 GRAPHICS 0
120 SETCOLOR 1,2,0:SETCOLOR 2,2,15
130 SETCOLOR 4,3,0
140 PRINT CHR$(125);M$
150 PRINT "This is a game for one to five players."
160 PRINT :PRINT "The equipment consists of the following"
170 PRINT "items:":PRINT
180 POKE 85,3:PRINT "1 ea. revolver (somewhere inside"
190 POKE 85,9:PRINT "this computer)."
200 PRINT
210 POKE 85,3:PRINT "1 ea. live bullet (in one of the"
220 POKE 85,9:PRINT "chambers in the revolver in"
230 POKE 85,9:PRINT "the computer)."
240 PRINT
250 PRINT "The players each take a turn pulling"
260 PRINT "the trigger. If the gun just makes a"
270 PRINT "clicking sound, that player survives."
280 PRINT "But if there is no clicking sound ..."
290 PRINT "Well, enough about that."
300 POSITION 0,21
310 PRINT "Strike any key to continue ...";
320 POKE 764,255:GET #1,K
330 PRINT CHR$(125);M$
340 PRINT "How many players are starting this"
350 PRINT "round (1-5)";
360 INPUT NP$:IF NP$>"0" AND NP$<"6" THEN 380
370 PRINT "1 through 5, please ...";:GOTO 360
380 NP=VAL(NP$)
390 PRINT CHR$(125);M$
400 FOR J=1 TO NP
410 PRINT "Enter the name of player #";J;CHR$(58)
420 CV=PEEK(84):CH=PEEK(85)
430 PRINT CL$(1,38);:POSITION CH,CV
440 POKE 85,5:X$=""
450 INPUT X$
460 IF LEN(X$)>0 AND LEN(X$)<20 THEN 490
470 PRINT "Quit foolin' around!"
480 POSITION CH,CV:GOTO 430
490 CX=ASC(X$)
500 IF CX>90 THEN X$(1,1)=CHR$(CX-32)
510 LX=LEN(X$)-1:LN=LEN(NA$)+1
520 N(J,1)=LN:N(J,2)=LN+LX
530 NA$(LN)=X$
540 NEXT J
550 Q=INT(6*RND(1)+1)
560 FOR J=1 TO NP
570 PRINT CHR$(125);M$
580 PRINT NA$(N(J,1),N(J,2));CHR$(58)
590 POKE 752,0:PRINT
600 PRINT "Pull the trigger or strike any key ..."
610 POKE 764,255:GET #1,K
620 FOR T=1 TO 100:NEXT T
630 POKE 752,1
640 IF Q=J THEN 790
```

```
650 PRINT :POKE 85,12
660 PRINT "*** CLICK ***"
670 SOUND 0,10,8,14:SOUND 0,0,0,0
680 FOR T=1 TO 800:NEXT T
690 NEXT J
700 POSITION 0,18
710 PRINT "All players survived this round."
720 POKE 752,0:PRINT
730 PRINT "Are you willing to push your luck and"
740 PRINT "try another round (Y/N)?";
750 POKE 764,255:GET #1,K
760 IF K=89 OR K=121 THEN 550
770 IF K=78 OR K=110 THEN 930
780 GOTO 750
790 PRINT CHR$(125);M$:PRINT
800 POKE 752,1:POKE 85,12
810 PRINT "*** BANG ***"
820 FOR SN=14 TO 0 STEP -2
830 SOUND 0,20,8,SN
840 FOR SD=1 TO 10:NEXT SD:NEXT SN
850 SOUND 0,0,0,0
860 FOR T=1 TO 200:NEXT T
870 GOSUB 980
880 PRINT :PRINT
890 PRINT "Dear ";NA$(N(J,1),N(J,2));CHR$(58)
900 PRINT :POKE 85,5
910 PRINT "You obviously have no desire"
920 POKE 85,5:PRINT "to play again."
930 PRINT :PRINT "Good bye ..."
940 FOR SS=10 TO 75:FOR SN=10 TO 0 STEP -2
950 SOUND 0,SS+ABS(SN-5),10,SN
960 NEXT SN:NEXT SS
970 POKE 82,2:GRAPHICS 0:END
980 RESTORE 1160
990 READ SF,SD:GOSUB 1120
1000 FOR SN=1 TO 3
1010 READ SD:GOSUB 1120
1020 NEXT SN
1030 READ SF:GOSUB 1120
1040 READ SF,SD:GOSUB 1120
1050 READ SD:GOSUB 1120
1060 READ SF,SD:GOSUB 1120
1070 READ SD:GOSUB 1120
1080 FOR SN=1 TO 2
1090 READ SF,SD:GOSUB 1120
1100 NEXT SN
1110 RETURN
1120 SOUND 0,SF,10,10
1130 FOR XX=1 TO SD:NEXT XX
1140 SOUND 0,0,0,0
1150 RETURN
1160 DATA 200,80,40,20,80,183,192,20,40
1170 DATA 200,20,40,206,20,200,100
```

Program 79 FAIR RUSSIAN ROULETTE

The measure of a man's real character is what he would do if he knew he never would be found out.

—Thomas Babingon Macaulay

I hate to say what happens to a player when you discretely insert a space at the end of his or her name. Tsk-tsk. Shame on you.

```
10 REM ** RUSSIAN ROULETTE **
20 REM
30 DIM M$(80),CL$(40),NA$(200),X$(40)
40 DIM N(5,2),NP$(1)
50 FOR K=1 TO 40
60 X$(K)=CHR$(42):CL$(K)=CHR$(32)
70 NEXT K
80 M$=CL$(1,11):M$(12)="RUSSIAN ROULETTE"
90 M$(28)=CHR$(155):M$(29)=X$
100 POKE 82,0:OPEN #1,4,0,"K:"
110 GRAPHICS 0
120 SETCOLOR 1,2,0:SETCOLOR 2,2,15
130 SETCOLOR 4,3,0
140 PRINT CHR$(125);M$
150 PRINT "This is a game for one to five players."
160 PRINT :PRINT "The equipment consists of the following"
170 PRINT "items:":PRINT
180 POKE 85,3:PRINT "1 ea. revolver (somewhere inside"
190 POKE 85,9:PRINT "this computer)."
200 PRINT
210 POKE 85,3:PRINT "1 ea. live bullet (in one of the"
220 POKE 85,9:PRINT "chambers in the revolver in"
230 POKE 85,9:PRINT "the computer)."
240 PRINT
250 PRINT "The players each take a turn pulling"
260 PRINT "the trigger. If the gun just makes a"
270 PRINT "clicking sound, that player survives."
280 PRINT "But if there is no clicking sound ..."
290 PRINT "Well, enough about that."
300 POSITION 0,21
310 PRINT "Strike any key to continue ...";
320 POKE 764,255:GET #1,K
330 PRINT CHR$(125);M$
340 PRINT "How many players are starting this"
350 PRINT "round (1-5)";
360 INPUT NP$:IF NP$>"0" AND NP$<"6" THEN 380
370 PRINT "1 through 5, please ...";:GOTO 360
380 NP=VAL(NP$)
390 PRINT CHR$(125);M$
400 GOSUB 1060
410 Q=INT(6*RND(1)+1)
420 FOR J=1 TO NP
```

```
430 X$=NA$(N(J,1),N(J,2))
440 IF X$(LEN(X$))=CHR$(32) THEN Q=J
450 PRINT CHR$(125);M$
460 PRINT X$
470 POKE 752,0:PRINT
480 PRINT "Pull the trigger or strike any key ..."
490 POKE 764,255:GET #1,K
500 FOR T=1 TO 100:NEXT T
510 POKE 752,1
520 IF Q=J THEN 670
530 PRINT :POKE 85,12
540 PRINT "*** CLICK ***"
550 SOUND 0,10,8,14:SOUND 0,0,0,0
560 FOR T=1 TO 800:NEXT T
570 NEXT J
580 POSITION 0,18
590 PRINT "All players survived this round."
600 POKE 752,0:PRINT
610 PRINT "Are you willing to push your luck and"
620 PRINT "try another round (Y/N)?";
630 POKE 764,255:GET #1,K
640 IF K=89 OR K=121 THEN 410
650 IF K=78 OR K=110 THEN 810
660 GOTO 630
670 PRINT CHR$(125);M$:PRINT
680 POKE 752,1:POKE 85,12
690 PRINT "*** BANG ***"
700 FOR SN=14 TO 0 STEP -2
710 SOUND 0,20,8,SN
720 FOR SD=1 TO 10:NEXT SD:NEXT SN
730 SOUND 0,0,0,0
740 FOR T=1 TO 200:NEXT T
750 GOSUB 860
760 PRINT :PRINT
770 PRINT "Dear ";NA$(N(J,1),N(J,2));CHR$(58)
780 PRINT :POKE 85,5
790 PRINT "You obviously have no desire"
800 POKE 85,5:PRINT "to play again."
810 PRINT :PRINT "Good bye ..."
820 FOR SS=10 TO 75:FOR SN=10 TO 0 STEP -2
830 SOUND 0,SS+ABS(SN-5),10,SN
840 NEXT SN:NEXT SS
850 POKE 82,2:GRAPHICS 0:END
860 RESTORE 1040
870 READ SF,SD:GOSUB 1000
880 FOR SN=1 TO 3
890 READ SD:GOSUB 1000
900 NEXT SN
910 READ SF:GOSUB 1000
920 READ SF,SD:GOSUB 1000
930 READ SD:GOSUB 1000
940 READ SF,SD:GOSUB 1000
950 READ SD:GOSUB 1000
960 FOR SN=1 TO 2
970 READ SF,SD:GOSUB 1000
980 NEXT SN
```

```
990 RETURN
1000 SOUND 0,SF,10,10
1010 FOR XX=1 TO SD:NEXT XX
1020 SOUND 0,0,0,0
1030 RETURN
1040 DATA 200,80,40,20,80,183,192,20,40
1050 DATA 200,20,40,206,20,200,100
1060 FOR N=1 TO NP
1070 CV=2*N+6
1080 X$=""
1090 POSITION 0,CV
1100 PRINT "Player #";N;", enter your first name:"
1110 PRINT CL$(1,39);:POKE 85,0:PRINT " ";
1120 GET #1,K
1130 IF K=155 THEN 1200
1140 PRINT CHR$(K);
1150 IF  NOT (K=126 OR K=156) THEN 1180
1160 IF LEN(X$)<=1 THEN X$="":GOTO 1120
1170 X$=X$(1,LEN(X$)-1):GOTO 1120
1180 X$(LEN(X$)+1)=CHR$(K)
1190 GOTO 1120
1200 IF LEN(X$)>2 AND LEN(X$)<12 THEN 1230
1210 PRINT
1220 PRINT "Aww, get serious!":GOTO 1080
1230 X=LEN(X$)-1
1240 N(N,1)=LEN(NA$)+1:N(N,2)=N(N,1)+X
1250 NA$(LEN(NA$)+1)=X$
1260 NEXT N
1270 RETURN
```

Program 80 SIMPLE SIMON SEQUENCE

1-2-2-4-4 . . .@#$$#@ # 4-2-2-1-3 . . . *& ^## @! 1-1-2-4 . . . .

—Overheard in countless homes on Christmas day, 1980

```
10 REM ** SIMPLE SIMON **
20 REM
30 DIM M$(80),A(100),I(100),XX$(40)
40 DIM CL$(40)
50 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
60 M$(15)="SIMPLE SIMON":M$(27)=CHR$(155)
70 FOR K=1 TO 40
80 M$(27+K)=CHR$(42):CL$(K)=CHR$(32)
90 NEXT K
100 POKE 82,0:OPEN #1,4,0,"K:"
110 GRAPHICS 0
120 SETCOLOR 1,3,0:SETCOLOR 2,3,15
130 PRINT CHR$(125);M$
140 PRINT "Do you think you can remember a se-"
150 PRINT "quence of numbers? Can you do it if"
160 PRINT "the sequence grows longer with each"
170 PRINT "attempt?"
180 PRINT :PRINT "Your job here is to reproduce the se-"
```

```
190 PRINT "quence after the computer shows it to"
200 PRINT "you."
210 PRINT :PRINT "What's the longest sequence you think"
220 PRINT "you can do (2-100) ";
230 GOSUB 940:SL=XX
240 IF SL<2 OR SL>100 THEN PRINT "? ";:GOTO 230
250 POSITION 0,20
260 PRINT "Strike any key to begin ...";
270 POKE 752,255:GET #1,K
280 PRINT CHR$(125);M$
290 GOSUB 630
300 FOR K=1 TO SL
310 A(K)=INT(4*RND(1)+1)
320 FOR J=1 TO K
330 HT=A(J)*5+10
340 POSITION HT+1,12
350 PRINT CHR$(32);CHR$(A(J)+176);CHR$(32);
360 FOR SN=1 TO 20
370 SOUND 0,40,10,10
380 NEXT SN
390 SOUND 0,0,0,0
400 FOR T=1 TO 100:NEXT T
410 GOSUB 630
420 NEXT J
430 GOSUB 670
440 IF FL=1 THEN 830
450 NEXT K
460 PRINT CHR$(125);M$
470 POSITION 6,4:POKE 752,1
480 PRINT "** YOU BEAT THE MACHINE **"
490 FOR SN=1 TO 4:FOR SS=30 TO 10 STEP -1
500 SOUND 0,SS,10,10
510 FOR SD=1 TO 10:NEXT SD:NEXT SS
520 SOUND 0,0,0,0
530 NEXT SN
540 PRINT :POKE 85,4
550 PRINT "With a sequence of ";SL;" numbers."
560 POSITION 0,20:POKE 752,0
570 PRINT "Try again (Y/N)? ";
580 FL=0
590 POKE 764,255:GET #1,K
600 IF K=89 OR K=121 THEN PRINT CHR$(125);M$:GOTO 210
610 IF  NOT (K=78 OR K=110) THEN 590
620 POKE 82,2:GRAPHICS 0:END
630 FOR N=1 TO 4
640 POSITION 11+5*N,12
650 PRINT CHR$(32);N;CHR$(32);
660 NEXT N:RETURN
670 POSITION 0,19:POKE 752,0
680 PRINT "TYPE THAT SEQUENCE:"
690 FOR L=1 TO K
700 POKE 764,255:GET #1,G
710 IF G>52 OR G<49 THEN 700
720 NK=G-48
730 PRINT NK;CHR$(32);
740 I(L)=NK
```

```
750 IF I(L)<>A(L) THEN FL=1:RETURN
760 Q=I(L)
770 NEXT L
780 FOR T=1 TO 250:NEXT T
790 POKE 752,1
800 FOR LL=19 TO 22:POSITION 0,LL
810 PRINT CL$(1,39);:NEXT LL
820 RETURN
830 PRINT CHR$(125);M$:PRINT
840 POKE 85,8:POKE 752,1
850 PRINT " *** YOU GOOFED ***"
860 FOR SN=20 TO 40:FOR SS=1 TO 10
870 SOUND 0,SN+ABS(SS-5),10,10
880 NEXT SS:NEXT SN
890 SOUND 0,0,0,0
900 PRINT :POKE 85,6
910 PRINT "You got ";J-2;" keys correct"
920 GOTO 560
930 POKE 82,2:GRAPHICS 0:END
940 INPUT XX$
950 FOR NX=1 TO LEN(XX$)
960 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 980
970 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 940
980 NEXT NX
990 XX=VAL(XX$)
1000 RETURN
```

Program 81 REACTION-TIME TESTER

Faster than a speeding bullet (Pow!—cheweeeeng).
More powerful than a locomotive (Chucka-chucka-chucka)!
Able to leap tall buildings at a single bound (Wissssh)!
Look! Up in the sky!
It's a bird!
It's a plane!
It's Su-u-u-u-uper Ma-a-a-an!

—From Mutual Broadcasting's "Superman"

```
10 REM ** REACTION-TIME TESTER **
20 REM
30 DIM M$(80),CL$(40),S$(40)
40 FOR K=1 TO 36
50 CL$(K)=CHR$(32):S$(K)=CHR$(42)
60 NEXT K
70 M$=CL$(1,10)
80 M$(11)="REACTION-TIME TESTER"
90 M$(31)=CHR$(155):M$(32)=S$
100 OPEN #1,4,0,"K:"
110 GRAPHICS 0
120 F=0:SM=0:R=0
130 PRINT CHR$(125);M$
140 POSITION 2,20
```

```
150 PRINT "Strike any key start a test ...";
160 POKE 764,255:GET #1,K
170 PRINT CHR$(125);M$
180 POKE 752,1
190 PRINT "Strike the SPACE BAR when the aster-"
200 PRINT "isks(*) appear."
210 POSITION 2,20
220 PRINT "Watch for asterisks ..."
230 POKE 746,255
240 GOSUB 680
250 POKE 764,255
260 D=INT(150*RND(1)+75)
270 FOR T=1 TO D
280 IF PEEK(764)<>255 THEN 660
290 NEXT T
300 R=0
310 POSITION 2,6
320 PRINT S$(1,12)
330 FOR R=1 TO 300
340 IF PEEK(764)<>255 THEN 380
350 NEXT R
360 PRINT :PRINT "You took too long; forget it."
370 FOR T=1 TO 500:NEXT T:GOTO 430
380 PRINT :PRINT
390 REM
400 REM
410 PRINT "Your reaction time is ";R;" hundredths"
420 PRINT "of a second."
430 PRINT :POKE 752,0
440 PRINT "Would you like to try again (Y/N)?";
450 F=F+1:SM=SM+R
460 POKE 764,255:GET #1,K
470 IF K=89 OR K=121 THEN 130
480 IF  NOT (K=78 OR K=110) THEN 460
490 PRINT CHR$(125);M$:PRINT :PRINT
500 POKE 752,1
510 IF F=0 THEN 530
520 AV=INT(SM/F)
530 PRINT "Your average score is ";AV;" hundredths"
540 PRINT "of a second."
550 PRINT :PRINT
560 IF AV>50 THEN PRINT "You need a little improvement."
570 IF AV<25 THEN PRINT "That's very good."
580 IF AV>=25 AND AV<=50 THEN PRINT "Not bad."
590 FOR T=1 TO 500:NEXT T
600 POSITION 2,20
610 POKE 752,0
620 PRINT "Strike any key ...";
630 GOSUB 680
640 POKE 764,255:GET #1,K
650 GRAPHICS 0:END
660 PRINT "Too soon -- CALM DOWN"
670 POKE 764,255:GOTO 260
680 FOR SS=14 TO 0 STEP -2
690 SOUND 0,40,10,SS
700 FOR ST=1 TO 6:NEXT ST
```

```
710 NEXT SS
720 SOUND 0,0,0,0
730 RETURN
```

Program 82 SPEECH WRITER

"What more can I say?"

—Overheard at a Toastmaster's convention

Say what you're going to say. Say it. Then say what you said. This program helps a lot.

```
10 REM ** SPEECH WRITER **
20 REM
30 DIM H$(80),SX$(1),MS$(1),TD$(20)
40 DIM Z$(20),S$(150),X$(150),CL$(40)
50 DIM Y$(250),M$(250),CH$(2)
60 FOR K=1 TO 40
70 CL$(K)=CHR$(32):Y$(K)=CHR$(61)
80 NEXT K
90 H$="SPEECH WRITER":H$(14)=CHR$(155)
100 H$(15)=Y$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0
130 PRINT CHR$(125);H$
140 PRINT "Are you male of female (M/F)";
150 INPUT SX$
160 IF SX$="m" OR SX$="M" THEN SX$="M":GOTO 190
170 IF SX$="f" OR SX$="F" THEN SX$="F":GOTO 190
180 GOTO 150
190 PRINT
200 PRINT "Are you married (Y/N)";
210 INPUT MS$
220 IF MS$="y" OR MS$="Y" THEN MS$="Y":GOTO 250
230 IF MS$="n" OR MS$="N" THEN MS$="N":GOTO 250
240 GOTO 210
250 PRINT
260 PRINT "Indicate the time of day the speech"
270 PRINT "will be delivered:":PRINT
280 POKE 85,5:PRINT "MORNING"
290 POKE 85,5:PRINT "AFTERNOON"
300 POKE 85,5:PRINT "EVENING"
310 PRINT
320 INPUT TD$
330 IF ASC(TD$)>90 THEN TD$=CHR$(ASC(TD$)-32)
340 IF TD$(1,1)="M" THEN TD$="MORNING":GOTO 380
350 IF TD$(1,1)="A" THEN TD$="AFTERNOON":GOTO 380
360 IF TD$(1,1)="E" THEN TD$="EVENING":GOTO 380
370 GOTO 310
380 IF SX$="M" AND MS$="Y" THEN Z$="WIFE":GOTO 420
390 IF SX$="M" AND MS$="N" THEN Z$="GIRLFRIEND":GOTO 420
400 IF SX$="F" AND MS$="Y" THEN Z$="HUSBAND":GOTO 420
410 IF SX$="F" AND MS$="N" THEN Z$="BOYFRIEND":GOTO 420
```

```
1540 DATA A FUNNY THING HAPPENED TO ME ON MY WAY HERE THIS
1550 DATA : A GUY STOPPED ME ON THE STREET AND ASKED
1560 DATA ME FOR AN EXAMPLE OF SOMETHING THAT REALLY
1570 DATA BOTHERS ME. I SAID
1580 DATA 'TAKE MY
1590 DATA FOR EXAMPLE ...
```

Program 83 DUNGEON CHARACTER GENERATOR #1

Making what is inherently simple seem exceedingly difficult is the challenge of incompetence.

—Dungeon Master

```
10 REM ** DUNGEON CHARACTER GENERATOR #1 **
20 REM
30 DIM M$(80),X$(40),Y$(40),CN$(40),D$(128)
40 FOR K=1 TO 40
50 X$(K)=CHR$(32):Y$(K)=CHR$(46)
60 NEXT K
70 M$=X$(1,5)
80 M$(6)="DUNGEON CHARACTER GENERATOR #1"
90 M$(36)=CHR$(155):M$(37)=Y$
100 POKE 82,0:OPEN #1,4,0,"K:"
110 GRAPHICS 0
120 SETCOLOR 1,0,14:SETCOLOR 2,0,0
130 SETCOLOR 4,3,0
140 PRINT CHR$(125);M$
150 PRINT "Enter the character's name:"
160 PRINT :INPUT CN$
170 PRINT CHR$(125);M$
180 POKE 752,1
190 PRINT CN$
200 PRINT
210 RESTORE
220 PRINT
230 FOR N=1 TO INT(2*RND(1)+6)
240 READ D$
250 IF N=6 OR N=7 THEN PRINT
260 PRINT D$;Y$(1,30-PEEK(85));
270 GOSUB 430
280 IF N=6 THEN PRINT RD*10:GOTO 300
290 PRINT RD
300 NEXT N
310 FOR SS=150 TO 200:FOR SN=1 TO 10
320 SE=SS+ABS(2*SN-10)
330 SOUND 0,SE,10,10
340 NEXT SN:NEXT SS
350 SOUND 0,0,0,0
360 POSITION 0,20
370 POKE 752,0
380 PRINT "Need another character (Y/N)? ";
```

```
390 POKE 764,255:GET #1,K
400 IF K=89 OR K=121 THEN 140
410 IF  NOT (K=78 OR K=110) THEN 390
420 POKE 82,2:GRAPHICS 0:END
430 RD=INT(10*RND(1)+9):RETURN
440 DATA STRENGTH,WISDOM,DEXTERITY,CONSTITUTION
450 DATA CHARISMA,GOLD PIECES,SHOE SIZE
```

Program 84 TIC-TAC-TOE

The will to conquer is the first condition of victory.

—Marshal Ferdinand Foch

```
10 REM ** TACKY TIC-TAC-TOE **
20 REM
30 DIM M$(80),CL$(40),A$(9),C(8),W(8,3)
40 DIM Y$(40),B$(4),N(8,3)
50 FOR K=1 TO 40
60 Y$(K)=CHR$(35):CL$(K)=CHR$(32)
70 NEXT K
80 M$=CL$(1,14):M$(15)="TIC-TAC-TOE"
90 M$(26)=CHR$(155):M$(27)=Y$
100 POKE 82,0:OPEN #1,4,0,"K:"
110 GRAPHICS 0
120 SETCOLOR 1,13,0:SETCOLOR 2,13,15
130 SETCOLOR 4,1,0
140 PRINT CHR$(125);M$:POKE 752,1
150 PRINT "Think you are pretty good with the old"
160 PRINT "X's and O's?"
170 PRINT :PRINT "Well, try me!"
180 FOR T=1 TO 50
190 GOSUB 1060
200 POSITION 0,20
210 POKE 752,0
220 PRINT "Strike any key to begin ...";
230 POKE 764,255:GET #1,K
240 FOR K=1 TO 8:READ C:C(K)=C:NEXT K
250 B$=CL$(1,4)
260 FOR Y=1 TO 8:FOR X=1 TO 3
270 READ C:N(Y,X)=C:NEXT X:NEXT Y
280 FOR K=1 TO 9:A$(K)="*":NEXT K
290 A$(1,1)="O":FL=0
300 PRINT CHR$(125);M$
310 GOSUB 840
320 GOSUB 1060
330 POSITION 0,17
340 POKE 752,0
350 PRINT "Which square do you want (1-9)? ";
360 POKE 764,255:GET #1,K
370 IF K<49 OR K>57 THEN PRINT CHR$(253);:GOTO 360
380 POSITION 0,17
390 POKE 752,1
400 PRINT "Please wait ...";
```

```
410 PRINT CL$(1,38-PEEK(85));
420 SQ=K-48
430 IF A$(SQ,SQ)="*" THEN 450
440 PRINT CHR$(253);:GOTO 330
450 A$(SQ,SQ)="X"
460 GOSUB 700
470 IF FL>0 THEN 520
480 GOSUB 950
490 GOSUB 700
500 IF FL>0 THEN 520
510 GOTO 310
520 GOSUB 840
530 IF FL<>1 THEN 570
540 PRINT :PRINT "I WON"
550 FOR K=1 TO 3:GOSUB 1060:NEXT K
560 GOTO 630
570 IF FL<>2 THEN 610
580 PRINT :PRINT "YOU WIN"
590 FOR K=1 TO 4:GOSUB 1110:NEXT K
600 GOTO 630
610 FOR K=1 TO 5:GOSUB 1060:NEXT K
620 PRINT "It's a TIE game"
630 PRINT
640 POKE 752,0
650 PRINT "Play again (Y/N)? ";
660 POKE 764,255:GET #1,K
670 IF K=89 OR K=121 THEN 280
680 IF  NOT (K=78 OR K=110) THEN 660
690 POKE 82,2:GRAPHICS 0:END
700 FOR Y=1 TO 8:CR=0:XR=0:SR=0
710 FOR X=1 TO 3:SQ=N(Y,X)
720 IF A$(SQ,SQ)="X" THEN XR=XR+1
730 IF A$(SQ,SQ)="O" THEN CR=CR+1
740 NEXT X
750 IF CR=3 THEN FL=1
760 IF XR=3 THEN FL=2
770 IF FL<>0 THEN 830
780 FOR K=1 TO 9
790 IF A$(K,K)="*" THEN SR=SR+1
800 NEXT K
810 IF SR=0 THEN FL=3
820 NEXT Y
830 RETURN
840 PRINT CHR$(125);M$
850 POSITION 0,20:PRINT Y$
860 POKE 85,6
870 PRINT "O=Computer";B$;"X=You"
880 POSITION 0,3
890 FOR C=0 TO 6 STEP 3:PRINT :PRINT :PRINT
900 FOR R=1 TO 3:PRINT B$;
910 N=R+C:PRINT N;
920 PRINT A$(N,N);
930 NEXT R:NEXT C:PRINT :PRINT
940 PRINT :RETURN
950 CNT=1
960 E=C(CNT)
```

```
970 IF A$(E,E)="*" THEN A$(E,E)="O":GOTO 1010
980 CNT=CNT+1
990 IF CNT>8 THEN FL=3:GOTO 1010
1000 GOTO 960
1010 RETURN
1020 DATA 9,3,7,5,2,4,6,8
1030 DATA 1,2,3,4,5,6,7,8,9
1040 DATA 1,4,7,2,5,8,3,6,9
1050 DATA 1,5,9,3,5,7
1060 FOR SS=14 TO 0 STEP -1
1070 SOUND 0,20,10,SS
1080 FOR SD=1 TO 5:NEXT SD:NEXT SS
1090 SOUND 0,0,0,0
1100 RETURN
1110 FOR SS=100 TO 50 STEP -1
1120 SOUND 0,SS,10,10
1130 NEXT SS
1140 SOUND 0,0,0,0
1150 RETURN
```

Program 85 MAZES

A man must have a certain amount of intelligent ignorance to get anywhere.

—Charles F. Kettering

```
10 REM ** RANDOM MAZE **
20 REM
30 DIM M$(80),NM$(6)
40 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
50 M$(15)="RANDOM MAZE":M$(26)=CHR$(155)
60 FOR K=1 TO 36:M$(26+K)=CHR$(96):NEXT K
70 OPEN #1,4,0,"K:"
80 GRAPHICS 0:PRINT CHR$(125);M$:PRINT
90 PRINT "The computer is about to draw a"
100 PRINT "maze for you. You objective is to"
110 PRINT "direct a little orange creature"
120 PRINT "through the maze and to the pink"
130 PRINT "rectange in the upper left-hand"
140 PRINT "corner."
150 PRINT
160 PRINT "The trick is to do the job with as"
170 PRINT "few steps as possible."
180 POSITION 2,20
190 PRINT "Enter a level of difficulty for"
200 PRINT "yourself (1-9) ...";
210 POKE 754,255:GET #1,K
220 IF K<49 OR K>57 THEN 210
230 DL=K+16
240 BM=32000
250 GRAPHICS 3
260 SETCOLOR 0,3,4:SETCOLOR 1,6,12
270 SETCOLOR 2,12,0:SETCOLOR 4,2,7
280 MC=1:GC=2:OC=3:BC=0
```

```
290 NM=0
300 POKE 752,1
310 PRINT "Number of moves:"
320 GOSUB 990
330 PRINT
340 PRINT "Use ARROW keys to move."
350 PRINT "Strike RETURN to abort.";
360 COLOR OC:PLOT 0,0:DRAWTO 39,0
370 DRAWTO 39,19:DRAWTO 0,19
380 DRAWTO 0,0
390 COLOR GC
400 FOR LL=1 TO 3
410 PLOT 1,LL:DRAWTO 4,LL
420 NEXT LL
430 COLOR MC:PLOT 37,17
440 COLOR OC
450 FOR N=1 TO DL
460 X=INT(38*RND(1)+1)
470 Y=INT(18*RND(1)+1)
480 LOCATE X,Y,TH:IF TH<>BC THEN 460
490 PLOT X,Y
500 NEXT N
510 CH=37:CV=17:NH=CH:NV=CV
520 GET #1,K
530 NH=CH:NV=CV
540 IF K=155 THEN 750
550 IF  NOT (K=42 OR K=43 OR K=45 OR K=61) THEN 520
560 IF K=43 AND CH>1 THEN NH=CH-1:GOTO 610
570 IF K=42 AND CH<38 THEN NH=CH+1:GOTO 610
580 IF K=61 AND CV<18 THEN NV=NV+1:GOTO 610
590 IF K=45 AND CV>1 THEN NV=NV-1:GOTO 610
600 GOTO 520
610 LOCATE NH,NV,CC
620 IF CC=GC THEN 760
630 NM=NM+1:GOSUB 990
640 IF CC=BC THEN 690
650 SOUND 0,20,10,10
660 FOR SD=1 TO 5:NEXT SD
670 SOUND 0,0,0,0
680 GOTO 520
690 SOUND 0,100,10,10:SOUND 0,0,0,0
700 COLOR BC:PLOT CH,CV
710 COLOR MC:PLOT NH,NV
720 COLOR MC:PLOT NH,NV
730 CH=NH:CV=NV
740 GOTO 520
750 QF=1
760 GRAPHICS 0:PRINT CHR$(125);M$
770 IF QF=0 THEN 810
780 PRINT "You aborted the attempt at ";NM;" moves,"
790 PRINT "but that doesn't count.":PRINT
800 QF=0:NM=BM:GOTO 870
810 FOR SN=1 TO 4:FOR SS=50 TO 10 STEP -1
820 SOUND 0,SS,10,10
830 NEXT SS:NEXT SN
840 SOUND 0,0,0,0
```

```
850 PRINT "You did the job in ";NM;" moves."
860 PRINT
870 IF NM<BM THEN BM=NM
880 PRINT "Best so far is ";
890 IF BM>=32000 THEN PRINT "not relevant";:GOTO 910
900 PRINT BM;
910 PRINT CHR$(46)
920 POSITION 2,20
930 PRINT "Want to see if you can do better"
940 PRINT "(Y/N)?";
950 POKE 764,255:GET #1,K
960 IF K=89 OR K=121 THEN 250
970 IF  NOT (K=78 OR K=110) THEN 950
980 PRINT CHR$(125):END
990 NM$=STR$(NM)
1000 FOR N=0 TO LEN(NM$)-1
1010 POKE 40819+N,PEEK(ADR(NM$)+N)-32
1020 NEXT N
1030 RETURN
```

Program 86 ROBOT MAZE

The danger of the past was that men became slaves. The danger of the future is that man may become robot.

—Erich Fromm

```
10 REM ** ROBOT MAZE **
20 REM
30 DIM SC$(20),M$(20),L$(20)
40 OPEN #1,4,0,"K:"
50 FOR K=1 TO 15:SC$(K)=CHR$(32):NEXT K
60 M$="ROBOT MAZE"
70 POKE 82,0:GRAPHICS 0:PRINT CHR$(125)
80 PRINT SC$;M$
90 FOR K=1 TO 40:PRINT CHR$(42);:NEXT K
100 PRINT
110 PRINT "Think you have to be intelligent to"
120 PRINT "solve a maze? Well, not so."
130 PRINT
140 PRINT "The random-motion 'robot' in this pro-"
150 PRINT "gram proves the point."
160 PRINT
170 PRINT "He cheats sometimes, though. Watch him"
180 PRINT "when he gets running with a good head"
190 PRINT "of steam -- he will sometimes jump"
200 PRINT "over an obstacle!"
210 PRINT :PRINT
220 PRINT "Incidentally, the rectangle in the"
230 PRINT "upper left-hand corner of his maze"
240 PRINT "is the goal box."
250 PRINT :PRINT
260 PRINT "Enter a level of maze complexity for"
```

```
270 PRINT "the little sucker (1-5):";
280 POKE 764,255:GET #1,K
290 IF K<49 OR K>53 THEN 280
300 DL=25*(K-48)+16
310 POSITION 0,20
320 PRINT "Strike any key to start the job ... ";
330 POKE 764,255:POKE 82,2
340 BM=32000
350 NM=0
360 GRAPHICS 3
370 SETCOLOR 0,4,0:SETCOLOR 1,8,0
380 SETCOLOR 2,8,14:SETCOLOR 4,0,14
390 POKE 752,1
400 PRINT SC$(1,13);M$
410 PRINT "Number of moves:"
420 PRINT "Strike any key to abort the attempt."
430 COLOR 1
440 PLOT 0,0
450 DRAWTO 39,0:DRAWTO 39,19
460 DRAWTO 0,19:DRAWTO 0,0
470 PLOT 1,1
480 DRAWTO 38,1:DRAWTO 38,18
490 DRAWTO 1,18:DRAWTO 1,1
500 COLOR 3
510 PLOT 2,2:DRAWTO 4,2
520 PLOT 2,3:DRAWTO 4,3
530 COLOR 1
540 FOR N=1 TO DL
550 CH=INT(36*RND(1)+2)
560 CV=INT(16*RND(1)+2)
570 IF CH=37 AND CV=17 THEN 550
580 LOCATE CH,CV,X
590 IF X<>0 THEN 550
600 PLOT CH,CV
610 NEXT N
620 CH=37:CV=17
630 I=INT(5*RND(1)-2)
640 J=INT(5*RND(1)-2)
650 IF I=0 AND J=0 THEN 630
660 NH=CH+I:NV=CV+J
670 LOCATE NH,NV,CC
680 IF CC=3 THEN 860
690 IF  NOT (CC=0 OR CC=3) THEN 630
700 NM=NM+1
710 L$=STR$(NM)
720 FOR N=0 TO LEN(L$)-1
730 POKE 40859+N,PEEK(ADR(L$)+N)-32
740 NEXT N
750 FOR SS=15 TO 10 STEP -1
760 SOUND 0,SS,10,10
770 NEXT SS
780 SOUND 0,0,0,0
790 COLOR 0
800 PLOT CH,CV
810 COLOR 2
820 PLOT NH,NV
```

```
830 CH=NH:CV=NV
840 IF PEEK(764)=255 THEN 660
850 QF=1
860 GRAPHICS 0
870 PRINT CHR$(125);M$
880 FOR K=1 TO 36:PRINT CHR$(42);:NEXT K
890 PRINT
900 IF QF=0 THEN 940
910 PRINT "You aborted the attempt at ";NM;" moves,"
920 PRINT "but that doesn't count.":PRINT
930 QF=0:NM=BM:GOTO 1010
940 FOR SN=1 TO 4:FOR SS=50 TO 10 STEP -1
950 SOUND 0,SS,10,10
960 NEXT SS:FOR SD=1 TO 2
970 NEXT SD:NEXT SN
980 SOUND 0,0,0,0
990 PRINT "He did the job in ";NM;" moves."
1000 PRINT
1010 IF NM<BM THEN BM=NM
1020 PRINT "Best so far is ";
1030 IF BM>32000 THEN PRINT "not relevant";:GOTO 1050
1040 PRINT BM;
1050 PRINT CHR$(46)
1060 POSITION 2,20
1070 POKE 752,0:POKE 764,255
1080 PRINT "Want to see if he can do better (Y/N)?";
1090 GET #1,K
1100 IF K=89 OR K=121 THEN GRAPHICS 0:GOTO 330
1110 IF  NOT (K=78 OR K=110) THEN 1090
1120 GRAPHICS 0:END
```

Program 87 ROACH RACE

Look at that little sucker go!

—Overheard on an Air Force base in Turkey

```
10 REM ** ROACH RACE **
20 REM
30 DIM CL$(40),X$(40)
40 FOR K=1 TO 40:CL$(K)=CHR$(32):NEXT K
50 POKE 82,0:OPEN #1,4,0,"K:"
60 GRAPHICS 0:SETCOLOR 1,1,0:SETCOLOR 2,1,14
70 SETCOLOR 4,3,0
80 PRINT CHR$(125)
90 POKE 752,1
100 POKE 85,14:PRINT "ROACH RACE"
110 FOR N=1 TO 40:PRINT CHR$(96);
120 FOR SN=20 TO 10
130 SOUND 0,SN,10,10
140 NEXT SN
150 SOUND 0,0,0,0
160 FOR T=1 TO 50:NEXT T
170 NEXT N
```

```
180 PRINT
190 PRINT "You are about to witness races between"
200 PRINT "a pair of roaches."
210 FOR SN=15 TO 0 STEP -1
220 SOUND 0,100,10,SN
230 FOR SD=1 TO 2:NEXT SD:NEXT SN
240 SOUND 0,0,0,0
250 POSITION 0,8
260 X$="WARNING:"
270 FOR X=1 TO LEN(X$)
280 PRINT CHR$(ASC(X$(X))+128);
290 NEXT X
300 GOSUB 1080
310 FOR T=1 TO 250:NEXT T
320 PRINT :PRINT
330 PRINT "Betting on roach races may be illegal"
340 PRINT "in your State."
350 POSITION 0,20:POKE 752,0
360 PRINT "Strike any key to set up the race ...";
370 POKE 764,255:GET #1,K
380 POKE 752,1
390 PRINT CHR$(125)
400 FOR C=5 TO 37 STEP 16
410 FOR R=1 TO 19
420 POSITION C,R:PRINT CHR$(160)
430 NEXT R:NEXT C
440 LY=20:LX=12:RY=20:RX=29
450 GOSUB 1020:GOSUB 1080
460 POSITION 0,22
470 PRINT "GET READY ...";
480 FOR T=1 TO 500:NEXT T
490 POSITION 0,22:PRINT CL$(1,38);
500 GOSUB 1080
510 POSITION 0,22
520 PRINT "GET SET ...";
530 FOR T=1 TO 500:NEXT T
540 POSITION 0,22:PRINT CL$(1,38);
550 GOSUB 1080
560 FOR T=1 TO 20:NEXT T
570 GOSUB 1080
580 FOR T=1 TO 20:NEXT T
590 LP=RND(1):RP=RND(1)
600 GOSUB 890
610 IF LP<0.2 THEN 770
620 IF LP>0.8 THEN 800
630 LY=LY-1
640 IF RP<0.2 THEN 830
650 IF RP>0.8 THEN 860
660 RY=RY-1
670 IF RY<4 OR LY<4 THEN 700
680 GOSUB 1020
690 GOTO 580
700 GOSUB 1020
710 POSITION 0,20
720 IF LY<4 AND RY<4 THEN PRINT "IT'S A TIE":GOTO 760
730 IF LY<4 THEN PRINT "THE ROACH ON THE LEFT WON!!"
```

```
740 IF RY<4 THEN PRINT "THE ROACH ON THE RIGHT WON!!"
750 GOSUB 1080
760 GOTO 950
770 LX=LX-1
780 IF LX<2 THEN LX=2
790 GOTO 640
800 LX=LX+1
810 IF LX>16 THEN LX=16
820 GOTO 640
830 RX=RX-1
840 IF RX<17 THEN RX=18
850 GOTO 670
860 RX=RX+1
870 IF RX>33 THEN RX=33
880 GOTO 670
890 GOSUB 1050
900 FOR SN=20 TO 10
910 SOUND 0,SN,10,10
920 NEXT SN
930 SOUND 0,0,0,0
940 RETURN
950 POSITION 0,22
960 PRINT "Strike the RETURN key to race again"
970 PRINT "or the X key to do something else ...";
980 POKE 764,255:GET #1,K
990 IF K=155 THEN 390
1000 IF  NOT (K=88 OR K=110) THEN 980
1010 POKE 82,2:GRAPHICS 0:END
1020 POSITION LX,LY:PRINT CHR$(96)
1030 POSITION RX,RY:PRINT CHR$(96)
1040 RETURN
1050 POSITION LX,LY:PRINT CHR$(32)
1060 POSITION RX,RY:PRINT CHR$(32)
1070 RETURN
1080 FOR SN=1 TO 10:FOR SS=14 TO 2 STEP -4
1090 SOUND 0,20,10,SS
1100 NEXT SS:NEXT SN
1110 SOUND 0,0,0,0
1120 RETURN
```

Program 88 ROACH RACE PLUS

It's OK to take candy from a baby as long as you know where it has been.
—From *Modern American Wisdom* (unpublished)

Sneaking a space at the end of your name gives your roach a shot of steroids.

```
10 REM ** ROACH RACE **
20 REM
30 DIM CL$(40),X$(40),P$(40),P(2,2)
40 DIM M$(80),B(2),M(2),L$(40),XX$(10)
50 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
```

```
60 M$(15)="ROACH RACE":M$(25)=CHR$(155)
70 FOR K=1 TO 40
80 L$(K)=CHR$(96):CL$(K)=CHR$(32)
90 NEXT K
100 M$(26)=L$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0:SETCOLOR 1,1,0:SETCOLOR 2,1,14
130 SETCOLOR 4,3,0
140 PRINT CHR$(125)
150 POKE 752,1
160 POKE 85,14:PRINT "ROACH RACE"
170 FOR N=1 TO 40:PRINT CHR$(96);
180 FOR SN=20 TO 10
190 SOUND 0,SN,10,10
200 NEXT SN
210 SOUND 0,0,0,0
220 FOR T=1 TO 50:NEXT T
230 NEXT N
240 PRINT
250 PRINT "You are about to witness races between"
260 PRINT "a pair of roaches."
270 FOR SN=15 TO 0 STEP -1
280 SOUND 0,100,10,SN
290 FOR SD=1 TO 2:NEXT SD:NEXT SN
300 SOUND 0,0,0,0
310 POSITION 0,8
320 X$="WARNING:"
330 FOR X=1 TO LEN(X$)
340 PRINT CHR$(ASC(X$(X))+128);
350 NEXT X
360 GOSUB 1660
370 FOR T=1 TO 250:NEXT T
380 M(1)=100:M(2)=100
390 PRINT :PRINT
400 PRINT "Betting on roach races may be illegal"
410 PRINT "in your State."
420 POSITION 0,20:POKE 752,0
430 PRINT "Strike any key to set up the bets ...";
440 POKE 764,255:GET #1,K
450 PRINT CHR$(125);M$
460 GOSUB 1710
470 PRINT CHR$(125);M$
480 PRINT P$(P(1,1),P(1,2))
490 PRINT "Your roach is the one on the LEFT"
500 PRINT
510 PRINT P$(P(2,1),P(2,2))
520 PRINT "Your is the one on the RIGHT"
530 PRINT L$
540 FOR K=1 TO 2:POSITION 0,10
550 PRINT P$(P(K,1),P(K,2))
560 PRINT "You have $";M(K);CHR$(46)
570 GOSUB 1930
580 B(K)=XX
590 IF B(K)>M(K) THEN PRINT "You can't bet more than you have!":GOTO 570
600 IF B(K)<=0 THEN PRINT "You have to bet something!":GOTO 570
610 POKE 752,1
```

```
620 FOR LL=10 TO 22:POSITION 0,LL
630 PRINT CL$(1,38);:NEXT LL
640 NEXT K
650 POKE 752,0
660 X$=P$(P(1,1),P(1,2))
670 IF X$(LEN(X$))=CHR$(32) THEN F1=1
680 X$=P$(P(2,1),P(2,2))
690 IF X$(LEN(X$))=CHR$(32) THEN F2=1
700 PRINT CHR$(125);M$:PRINT
710 PRINT "The bets are all in."
720 POSITION 0,20
730 PRINT "Strike any key to begin the race ...";
740 POKE 764,255:GET #1,K
750 PRINT
760 POKE 752,1
770 PRINT CHR$(125)
780 FOR C=5 TO 37 STEP 16
790 FOR R=1 TO 19
800 POSITION C,R:PRINT CHR$(160)
810 NEXT R:NEXT C
820 LY=20:LX=12:RY=20:RX=29
830 GOSUB 1600:GOSUB 1660
840 POSITION 0,22
850 PRINT "GET READY ...";
860 FOR T=1 TO 500:NEXT T
870 POSITION 0,22:PRINT CL$(1,38);
880 GOSUB 1660
890 POSITION 0,22
900 PRINT "GET SET ...";
910 FOR T=1 TO 500:NEXT T
920 POSITION 0,22:PRINT CL$(1,38);
930 GOSUB 1660
940 FOR T=1 TO 20:NEXT T
950 GOSUB 1660
960 FOR T=1 TO 20:NEXT T
970 LP=RND(1):RP=RND(1)
980 IF F1=1 THEN LP=0.5
990 IF F2=1 THEN RP=0.5
1000 GOSUB 1290
1010 IF LP<0.2 THEN 1170
1020 IF LP>0.8 THEN 1200
1030 LY=LY-1
1040 IF RP<0.2 THEN 1230
1050 IF RP>0.8 THEN 1260
1060 RY=RY-1
1070 IF RY<4 OR LY<4 THEN 1100
1080 GOSUB 1600
1090 GOTO 960
1100 GOSUB 1600
1110 POSITION 0,20
1120 IF LY<4 AND RY<4 THEN PRINT "IT'S A TIE":GOTO 1160
1130 IF LY<4 THEN PRINT "THE ROACH ON THE LEFT WON!!"
1140 IF RY<4 THEN PRINT "THE ROACH ON THE RIGHT WON!!"
1150 GOSUB 1660
1160 GOTO 1350
1170 LX=LX-1
```

```
1180 IF LX<2 THEN LX=2
1190 GOTO 1040
1200 LX=LX+1
1210 IF LX>16 THEN LX=16
1220 GOTO 1040
1230 RX=RX-1
1240 IF RX<17 THEN RX=18
1250 GOTO 1070
1260 RX=RX+1
1270 IF RX>33 THEN RX=33
1280 GOTO 1070
1290 GOSUB 1630
1300 FOR SN=20 TO 10
1310 SOUND 0,SN,10,10
1320 NEXT SN
1330 SOUND 0,0,0,0
1340 RETURN
1350 FOR T=1 TO 600:NEXT T
1360 PRINT CHR$(125);M$
1370 IF LY<4 THEN WR=1:GOTO 1390
1380 IF RY<4 THEN WR=2
1390 PRINT "Congratulations, ";
1400 PRINT P$(P(WR,1),P(WR,2))
1410 PRINT "Your roach WON THE RACE!"
1420 PRINT "Your winnings so far are: $";
1430 M(WR)=M(WR)+B(WR):LR=WR+1
1440 PRINT M(WR):PRINT
1450 IF LR>2 THEN LR=1
1460 M(LR)=M(LR)-B(LR)
1470 PRINT :PRINT P$(P(LR,1),P(LR,2))
1480 PRINT "Your bankroll is now down to $";M(LR)
1490 IF M(LR)>1 THEN 1520
1500 PRINT "You're done!"
1510 M(1)=100:M(2)=100
1520 POSITION 0,22
1530 POKE 752,0
1540 PRINT "Strike the RETURN key to race again"
1550 PRINT "or the X key to do something else ...";
1560 POKE 764,255:GET #1,K
1570 IF K=155 THEN 470
1580 IF  NOT (K=88 OR K=110) THEN 1560
1590 POKE 82,2:GRAPHICS 0:END
1600 POSITION LX,LY:PRINT CHR$(96)
1610 POSITION RX,RY:PRINT CHR$(96)
1620 RETURN
1630 POSITION LX,LY:PRINT CHR$(32)
1640 POSITION RX,RY:PRINT CHR$(32)
1650 RETURN
1660 FOR SN=1 TO 10:FOR SS=14 TO 2 STEP -4
1670 SOUND 0,20,10,SS
1680 NEXT SS:NEXT SN
1690 SOUND 0,0,0,0
1700 RETURN
1710 FOR N=1 TO 2
1720 CV=2*N+6
1730 X$=""
```

```
1740 POSITION 0,CV
1750 PRINT "Player #";N;", enter your first name:"
1760 PRINT CL$(1,39);:POKE 85,0:PRINT " ";
1770 GET #1,K
1780 IF K=155 THEN 1850
1790 PRINT CHR$(K);
1800 IF  NOT (K=126 OR K=156) THEN 1830
1810 IF LEN(X$)<=1 THEN X$="":GOTO 1770
1820 X$=X$(1,LEN(X$)-1):GOTO 1770
1830 X$(LEN(X$)+1)=CHR$(K)
1840 GOTO 1770
1850 IF LEN(X$)>2 AND LEN(X$)<12 THEN 1880
1860 PRINT
1870 PRINT "Aww, get serious!":GOTO 1730
1880 X=LEN(X$)-1
1890 P(N,1)=LEN(P$)+1:P(N,2)=P(N,1)+X
1900 P$(LEN(P$)+1)=X$
1910 NEXT N
1920 RETURN
1930 PRINT "What is your bet -- $";
1940 INPUT XX$
1950 FOR NX=1 TO LEN(XX$)
1960 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 1980
1970 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 1940
1980 NEXT NX
1990 XX=VAL(XX$)
2000 RETURN
```

Program 89 SUBMARINE ATTACK

Run silent.
Run deep.
Run to the head before you sleep.

—Ancient submariners' proverb

```
10 REM ** SUBMARINE COMMAND **
20 REM
30 DIM M$(80),CL$(40),X$(40),Y$(40)
40 FOR K=1 TO 40
50 CL$(K)=CHR$(32):X$(K)=CHR$(8):Y$(K)=CHR$(92)
60 NEXT K
70 M$="SUBMARINE COMMAND"
80 M$(18)=CHR$(155):M$(19)=X$
90 POKE 82,0:OPEN #1,4,0,"K:"
100 GRAPHICS 0
110 PRINT CHR$(125);M$
120 PRINT "You are a submarine commander on a"
130 PRINT "search-and-destroy mission."
140 PRINT :PRINT "You have 12 torpedoes on board, and"
150 PRINT "chances to destroy up to 12 surface"
160 PRINT "vessels.":PRINT
170 PRINT "Use the SPACE BAR to fire the tor-"
```

```
180 PRINT "pedoes and the X key to abort the"
190 PRINT "mission."
200 POSITION 0,20
210 PRINT "Strike any key to begin ...";
220 POKE 764,255:GET #1,K
230 SETCOLOR 1,13,14:SETCOLOR 2,13,0
240 SETCOLOR 4,8,14
250 PRINT CHR$(125);M$
260 PRINT CHR$(125)
270 HIT=0:TORP=12
280 SH=0:TV=19
290 FF=0:HF=0:EF=0
300 SD=0:TD=0
310 POKE 752,1
320 GOSUB 960
330 GOSUB 1120:GOSUB 1090
340 GOSUB 900
350 POSITION 0,4:PRINT X$
360 POSITION 0,20:PRINT Y$(1,39);
370 GOSUB 760
380 K=PEEK(764):IF K=255 THEN 450
390 IF K=22 OR K=86 THEN PRINT CHR$(125);M$:GOTO 650
400 POKE 764,255
410 IF FF=1 THEN 460
420 FF=1
430 TORP=TORP-1
440 GOSUB 1120
450 IF FF=0 THEN GOSUB 940:GOTO 480
460 GOSUB 960
470 IF EF=1 THEN 620
480 IF HF=0 THEN 370
490 POSITION SH,3
500 PRINT "BOOM-BLANG-BLOOEY"
510 SOUND 1,0,0,0
520 FOR K=1 TO 5:FOR SS=3*K TO 0 STEP -1
530 SETCOLOR 2,3,SS
540 SOUND 0,200,8,SS
550 FOR SD=1 TO K*4:NEXT SD
560 NEXT SS:NEXT K
570 SOUND 0,0,0,0
580 SETCOLOR 2,13,0
590 HIT=HIT+1
600 GOSUB 1120
610 PRINT CHR$(125):GOTO 280
620 PRINT CHR$(125);M$
630 PRINT "YOU HAVE EXHAUSTED YOUR SUPPLY OF TOR-"
640 PRINT "PEDOES."
650 PRINT "THE MISSION IS COMPLETED WITH ";HIT;
660 PRINT CHR$(32);"STRIKE";
670 IF HIT<>1 THEN PRINT "S";
680 SOUND 0,0,0,0:SOUND 1,0,0,0
690 PRINT CHR$(46)
700 POSITION 0,20:POKE 752,0
710 PRINT "DO YOU WANT ANOTHER MISSION (Y/N)? ";
720 POKE 764,255:GET #1,K
730 IF K=89 OR K=121 THEN 260
```

```
740 IF  NOT (K=78 OR K=110) THEN 720
750 POKE 82,2:GRAPHICS 0:END
760 POSITION SH,3
770 PRINT CHR$(32);"<=>";
780 GOSUB 1100
790 IF SD<=0 THEN 850
800 FOR SN=1 TO 15
810 SOUND 1,40,10,15/SN
820 NEXT SN
830 SD=SD-1
840 RETURN
850 SH=SH+1
860 IF SH<36 THEN 900
870 POSITION SH-1,3
880 PRINT CL$(1,4);
890 SH=1
900 IF SD>0 THEN 930
910 SD=INT(2*RND(1))
920 SOUND 1,0,0,0
930 RETURN
940 FOR T=1 TO 10:NEXT T
950 RETURN
960 POSITION 22,TV
970 IF TD>0 THEN TD=TD-1:RETURN
980 PRINT "!"
990 IF FF=0 THEN 1090
1000 SOUND 0,40,8,ABS(TV-4)
1010 POSITION 22,TV+1
1020 PRINT CHR$(32)
1030 GOSUB 1100
1040 TV=TV-1
1050 IF TV>3 THEN 1090
1060 IF TORP<=0 THEN EF=1:GOTO 1110
1070 POSITION 22,TV+1:PRINT CHR$(8)
1080 TV=19:FF=0:GOTO 960
1090 IF TD<=0 THEN TD=INT(2*RND(1))
1100 IF TV<5 AND SH>18 AND SH<22 THEN HF=1
1110 RETURN
1120 POSITION 4,21
1130 PRINT HIT;" HIT";
1140 IF HIT<>1 THEN PRINT "S";
1150 POSITION 18,21
1160 PRINT TORP;" TORPEDO";
1170 IF TORP<>1 THEN PRINT "ES";
1180 PRINT CHR$(32);"LEFT";
1190 PRINT CL$(1,39-PEEK(85));
1200 POSITION 4,22
1210 PRINT "SPACE=FIRE";CL$(1,4);"X=ABORT";
1220 RETURN
```

Program 90 MISSILE DEFENDER

Sparkle, sparkle little missile,
I sure do hope that you don't fizzle,

When we open silo's lid,
Built by the company with the lowest bid.

—From *Poems on Conjecture* (unpublished)

```
10 REM ** BALLISTIC MISSILES **
20 REM
30 DIM M$(80),CL$(40),Y$(40),D$(40)
40 DIM XX$(40),A$(20)
50 FOR K=1 TO 40
60 CL$(K)=CHR$(32):Y$(K)=CHR$(42)
70 NEXT K
80 M$=CL$(1,9)
90 M$(10)="BALLISTIC MISSILE GAME"
100 M$(32)=CHR$(155):M$(33)=Y$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0
130 PRINT CHR$(125);M$
140 POSITION 0,20
150 PRINT "Do you want to see the instructions"
160 PRINT "(Y/N)? ";
170 POKE 764,255:GET #1,K
180 IF K=78 OR K=110 THEN 410
190 IF  NOT (K=89 OR K=121) THEN 170
200 PRINT CHR$(125);M$:POKE 752,1
210 FOR N=1 TO 8:READ D$
220 FOR X=1 TO LEN(D$)
230 PRINT D$(X,X);
240 FOR T=1 TO 10
250 NEXT T:NEXT X
260 PRINT :NEXT N
270 D$="WARNING:"
280 PRINT
290 FOR X=1 TO LEN(D$)
300 PRINT CHR$(ASC(D$(X,X))+128);
310 NEXT X
320 FOR N=1 TO 3:GOSUB 1260
330 FOR T=1 TO 20:NEXT T
340 NEXT N
350 PRINT "It is inadvisable to use angles"
360 PRINT "of exactly 0 and 90 degrees."
370 PRINT :PRINT "Good Luck, and Stay Calm ..."
380 POSITION 0,20
390 PRINT "Strike any key to begin ...";
400 POKE 764,255:GET #1,K
410 TD=INT(20*RND(1)+5)
420 PRINT CHR$(125);M$
430 MR=4
440 PRINT "Missile range: ";TD;" KM"
450 POKE 752,0
460 PRINT "Enter the firing angle (0-90)";
470 MR=MR-1
480 GOSUB 1340:A=XX
490 IF A<0 OR A>90 THEN 440
500 IF A=0 OR A=90 THEN 570
```

```
510 A=A*3.14159/180
520 DD=100*SIN(A)/COS(A)
530 DD=INT(TD-D)
540 IF DD<0 THEN A$="Over"
550 IF DD>0 THEN A$="Under"
560 DD=ABS(DD)
570 FOR T=9 TO 0 STEP -1
580 SOUND 0,20,10,10
590 SOUND 0,0,0,0
600 POSITION 4,14:POKE 752,1
610 PRINT "T minus ";T;" seconds and counting"
620 FOR W=1 TO 100:NEXT W
630 NEXT T
640 POSITION 0,14:PRINT CL$(1,39);
650 POSITION 8,14
660 PRINT "** We have LIFT-OFF **";
670 PRINT CL$(39-PEEK(85)):PRINT
680 IF A=0 OR A=90 THEN 1090
690 ED=200:GOSUB 1540
700 IF DD<10 THEN 960
710 PRINT CHR$(125);M$
720 PRINT "Your missile was ";A$;" range by ";DD;" KM"
730 IF MR<>1 THEN 770
740 PRINT :PRINT "You have only 1 missile remaining."
750 PRINT "This Is It -- YOUR LAST CHANCE!"
760 GOTO 790
770 PRINT
780 PRINT "You now have ";MR;" missiles remaining."
790 IF MR=0 THEN 890
800 TD=TD-1
810 IF TD<5 THEN 870
820 PRINT
830 XX$="The ICBM is getting closer"
840 GOSUB 1410
850 PRINT CHR$(125);M$:PRINT
860 GOTO 440
870 PRINT CHR$(125);M$:PRINT
880 REM
890 ED=50:GOSUB 1540
900 POSITION 0,9
910 PRINT "Alas. The enemy missile reached its"
920 PRINT "destination -- Your Defense Silo."
930 FOR N=1 TO 4:GOSUB 1260
940 FOR SD=1 TO 20:NEXT SD:NEXT N
950 GOTO 1030
960 PRINT CHR$(125);M$:PRINT
970 FOR SN=1 TO 50
980 SOUND 0,100*RND(1)+10,10,10
990 NEXT SN
1000 SOUND 0,0,0,0
1010 PRINT :PRINT
1020 PRINT "You have destroyed the ICBM"
1030 POSITION 0,20:POKE 752,0
1040 PRINT "Want to play again (Y/N)? ";
1050 POKE 764,255:GET #1,K
```

```
1060 IF K=89 OR K=121 THEN 410
1070 IF  NOT (K=78 OR K=110) THEN 1050
1080 POKE 82,2:GRAPHICS 0:END
1090 ED=20:GOSUB 1540
1100 PRINT "You have shot the missile at YOURSELF!"
1110 FOR SN=10 TO 40:FOR SS=1 TO 10
1120 SOUND 0,SN+ABS(SS-5),10,10
1130 NEXT SS:NEXT SN
1140 SOUND 0,0,0,0
1150 FOR T=1 TO 500:NEXT T
1160 PRINT "You FAIL the exercise."
1170 GOTO 1030
1180 DATA The enemy has just fired an ICBM that
1190 DATA is aimed directly at your defense silo.
1200 DATA Enemy undercover agents have already
1210 DATA destroyed the guidance systems in your
1220 DATA anti-ballistic missiles; but you can
1230 DATA still aim them in the old way --
1240 DATA by setting a firing angle between
1250 DATA 0 and 90 degrees.
1260 FOR SS=14 TO 0 STEP -1
1270 SOUND 0,100,10,SS:SOUND 1,215,10,SS
1280 SOUND 2,19,10,SS
1290 FOR SD=1 TO 2:NEXT SD
1300 NEXT SS
1310 SOUND 0,0,0,0:SOUND 1,0,0,0
1320 SOUND 2,0,0,0
1330 RETURN
1340 INPUT XX$
1350 FOR NX=1 TO LEN(XX$)
1360 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 1380
1370 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 1340
1380 NEXT NX
1390 XX=VAL(XX$)
1400 RETURN
1410 FOR SN=1 TO 6
1420 POSITION 4,12
1430 IF SN/2=INT(SN/2) THEN 1470
1440 FOR X=1 TO LEN(XX$)
1450 PRINT CHR$(ASC(XX$(X))+128);
1460 NEXT X:GOTO 1480
1470 PRINT XX$
1480 FOR SS=14 TO 0 STEP -2
1490 SOUND 0,20,10,SS
1500 FOR SD=1 TO 5:NEXT SD
1510 NEXT SS:NEXT SN
1520 SOUND 0,0,0,0
1530 RETURN
1540 FOR T=14 TO 0 STEP -2
1550 SOUND 0,100,8,T
1560 FOR SN=1 TO ED:NEXT SN
1570 NEXT T
1580 SOUND 0,0,0,0
1590 RETURN
```

Program 91 HACKERS' AID

Buy a modem, and the world's your oyster.

—Anonymous (by choice)

Author's note: This is a long program, I know. But it is sure great for pulling the leg of some folks who know enough to be harmful, but not enough to be wise.

```
10 REM ** HACKERS AID **
20 REM
30 DIM M$(80),CN$(200),Y$(40),CL$(40)
40 DIM X$(40),CN(8,2),XX$(40),PW$(20)
50 FOR K=1 TO 40
60 Y$(K)=CHR$(45):CL$(K)=CHR$(32)
70 NEXT K
80 M$=CL$(1,14):M$(15)="HACKERS AID"
90 M$(26)=CHR$(155):M$(27)=Y$
100 FOR N=1 TO 8:READ X$
110 X=LEN(X$)-1
120 CN(N,1)=LEN(CN$)+1:CN(N,2)=CN(N,1)+X
130 CN$(LEN(CN$)+1)=X$
140 NEXT N
150 POKE 82,0:OPEN #1,4,0,"K:"
160 GRAPHICS 0
170 GRAPHICS 0
180 SETCOLOR 1,8,12:SETCOLOR 2,8,0
190 PRINT CHR$(125);M$
200 PRINT "Select a target system (1-7)"
210 PRINT "or exit (8)"
220 PRINT
230 FOR N=1 TO 8
240 POKE 85,5:PRINT "(";N;")";CHR$(32);
250 PRINT CN$(CN(N,1),CN(N,2))
260 NEXT N
270 POSITION 0,20
280 GET #1,K
290 IF K<49 OR K>56 THEN 280
300 CN=K-48
310 IF CN<7 THEN 390
320 IF CN=7 THEN 340
330 POKE 82,2:GRAPHICS 0:END
340 PRINT "Enter name of 'other' target system:"
350 INPUT X$
360 CN$=CN$(1,CN(7,1)-1)
370 CN(7,1)=LEN(CN$)+1:CN(7,2)=CN(7,1)+LEN(X$)-1
380 CN$(CN(7,1))=X$
390 PRINT CHR$(125);M$
400 POKE 752,1
410 SETCOLOR 1,3,0:SETCOLOR 2,3,14
420 PRINT "Phone interfacing mode:"
430 XX$=CN$(CN(CN,1),CN(CN,2)):GOSUB 2760
440 POSITION 0,8
450 PRINT "Locate your telephone near the CRT."
460 POSITION 0,20:POKE 752,0
```

```
470 PRINT "Strike any key when ready ....";
480 POKE 764,255:GET #1,K
490 POSITION 0,20:PRINT CL$(1,39);
500 POSITION 0,8:POKE 752,1
510 PRINT "Now testing local phone interface.";
520 PRINT CL$(1,39-PEEK(85));
530 PRINT
540 PRINT "Please wait";
550 PRINT CL$(1,39-PEEK(85)):PRINT
560 FOR T=1 TO 500*RND(1)+500:NEXT T
570 IF T>600 THEN 680
580 POSITION 0,8
590 XX$="Bad local connection"
600 FOR XX=1 TO LEN(XX$)
610 PRINT CHR$(ASC(XX$(XX))+128);
620 NEXT XX
630 PRINT CHR$(253);
640 PRINT CL$(1,39-PEEK(85));
650 PRINT :PRINT "Adjust the phone's position.";
660 PRINT CL$(1,39-PEEK(85));
670 GOTO 460
680 PRINT CHR$(125);M$
690 X$="Good local interface"
700 FOR XX=1 TO LEN(X$)
710 PRINT CHR$(ASC(X$(XX))+128);
720 NEXT XX
730 GOSUB 2800
740 POKE 752,0:PRINT
750 PRINT "Select number of long-distance nodes"
760 PRINT "(1-9)."
770 POSITION 0,17
780 PRINT :PRINT "NOTE:The larger the number of nodes,"
790 PRINT "the smaller the risk of a successful"
800 PRINT "telephone trace to you."
810 POSITION 0,11
820 POKE 764,255:GET #1,K
830 IF K<49 OR K>57 THEN 820
840 NN=K-48
850 PRINT NN;" node";
860 IF NN<>1 THEN PRINT "s";
870 PRINT " selected."
880 FOR LL=PEEK(84) TO 23
890 POSITION 0,LL:PRINT CL$(1,39);
900 NEXT LL
910 POSITION 0,20
920 PRINT "Strike any key to begin automatic"
930 PRINT "telephone networking ...";
940 POKE 764,255:GET #1,K
950 SETCOLOR 1,2,0:SETCOLOR 2,2,15
960 POKE 752,1:PRINT CHR$(125);
970 PRINT "Phone freaking for"
980 XX$=CN$(CN(CN,1),CN(CN,2))
990 FOR XX=1 TO LEN(XX$)
1000 PRINT CHR$(ASC(XX$(XX))+128);
1010 NEXT XX:PRINT
1020 PRINT Y$
```

```
1030 NT=0
1040 POSITION 0,7
1050 X=INT(738*RND(1)+250)
1060 W=INT(738*RND(1)+250)
1070 Z=INT(8999*RND(1)+1000)
1080 X$="(":X$(2)=STR$(X):X$(5)=")"
1090 X$(6)=STR$(W):X$(9)="-"
1100 X$(10)=STR$(Z)
1110 CH=PEEK(85):CV=PEEK(84)
1120 POSITION 17,5
1130 PRINT "Searching";CL$(1,39-PEEK(85));
1140 POSITION CH,CV
1150 IF 20*RND(1)>1 THEN 1210
1160 NT=NT+1
1170 GOSUB 2800
1180 CF=1
1190 POKE 85,5
1200 IF CF=1 THEN XX$=X$:GOSUB 2760:GOTO 1230
1210 POKE 85,5:PRINT X$
1220 IF CF=0 THEN 1420
1230 PRINT
1240 CH=PEEK(85):CV=PEEK(84)
1250 POSITION 17,5
1260 XX$="Dialing":GOSUB 2760
1270 PRINT CL$(1,39-PEEK(85));
1280 FOR K=1 TO 2:FOR J=1 TO 3
1290 GOSUB 1510
1300 NEXT J
1310 GOSUB 1540
1320 NEXT K
1330 FOR J=1 TO 4:GOSUB 1510:NEXT J
1340 POSITION 17,5
1350 XX$="Ringing":GOSUB 2760
1360 PRINT CL$(1,39-PEEK(85));
1370 FOR T=1 TO 500+250*RND(1):NEXT T
1380 POSITION 12,3
1390 PRINT NT;" of ";NN;" nodes completed."
1400 CF=0
1410 POSITION CH,CV
1420 IF NT>=NN THEN 1450
1430 IF PEEK(84)>=18 THEN 1040
1440 GOTO 1050
1450 POSITION 0,5
1460 XX$="Now confirming. Please wait ..."
1470 GOSUB 2760:PRINT CL$(1,38-PEEK(85));
1480 FOR T=1 TO 1000:NEXT T
1490 FOR N=1 TO 4:GOSUB 2800
1500 GOTO 1560
1510 FOR R=1 TO 10
1520 IF R<3 THEN SOUND 0,100,10,10:SOUND 0,0,0,0
1530 NEXT R
1540 FOR T=1 TO 5:NEXT T
1550 RETURN
1560 PRINT CHR$(125);M$
1570 PRINT "Successful ";N;"-node link to"
1580 XX$=CN$(CN(CN,1),CN(CN,2)):GOSUB 2760
```

```
1590 PRINT :POKE 752,0
1600 PRINT "Do you have a password for the target"
1610 PRINT "system (Y/N)? ";
1620 POKE 764,255:GET #1,K
1630 IF K=78 OR K=110 THEN 1800
1640 IF  NOT (K=89 OR K=121) THEN 1620
1650 PRINT
1660 PRINT :PRINT "Enter the password:"
1670 INPUT PW$
1680 POSITION 0,20:POKE 752,1
1690 PRINT "Now testing ";
1700 XX$=PW$:GOSUB 2760:PRINT
1710 PRINT "Please wait ..."
1720 FOR T=1 TO 1000:NEXT T
1730 PRINT CHR$(253);
1740 POSITION 0,20
1750 XX$="INVALID PASSWORD":GOSUB 2760
1760 PRINT CL$(1,36-PEEK(85))
1770 POKE 752,0
1780 PRINT "Strike any key for auto-select mode ...";
1790 POKE 764,255:GET #1,K
1800 SETCOLOR 1,13,15:SETCOLOR 2,13,0
1810 PRINT CHR$(125);:POKE 752,1
1820 PRINT "Password auto-search for"
1830 XX$=CN$(CN(CN,1),CN(CN,2)):GOSUB 2760
1840 PRINT :PRINT Y$
1850 NN=INT(10/CN*RND(1)+8-CN)
1860 NT=0
1870 IF CN>2 THEN 1910
1880 PRINT "Passwords for this host are changed"
1890 PRINT "hourly. This may take some time."
1900 FOR T=1 TO 1000:NEXT T
1910 POSITION 0,7
1920 X=INT(26*RND(1)+65)
1930 Y=INT(26*RND(1)+65)
1940 Z=INT(8999*RND(1)+1000)
1950 IF CN>2 THEN 1990
1960 X$=CHR$(X):X$(2)=CHR$(Y)
1970 X$(3)=":":X$(4)=STR$(Z)
1980 GOTO 2010
1990 X$=STR$(X):X$(2)="-"
2000 X$(3)=STR$(Y):X$(4)="-":X$(5)=STR$(Z)
2010 CH=PEEK(85):CV=PEEK(84)
2020 POSITION 17,6
2030 XX$="Searching":GOSUB 2760
2040 PRINT CL$(1,36-PEEK(85));
2050 POSITION CH,CV
2060 IF INT(20*RND(1))>1 THEN 2090
2070 NT=NT+1:GOSUB 2800:CF=1
2080 IF CF=1 THEN XX$=X$:GOSUB 2760:PRINT :GOTO 2110
2090 PRINT X$
2100 IF CF=0 THEN 2220
2110 CH=PEEK(85):CV=PEEK(84)
2120 POSITION 17,6
2130 XX$="Trying":GOSUB 2760
2140 PRINT CL$(1,36-PEEK(85));
```

```
2150 FOR T=1 TO 500:NEXT T
2160 POSITION 17,6
2170 XX$="Confirming":GOSUB 2760
2180 PRINT CL$(1,36-PEEK(85));
2190 FOR T=1 TO 250+125*RND(1):NEXT T
2200 CF=0
2210 POSITION CH,CV
2220 IF NT>=NN THEN 2250
2230 IF PEEK(84)>=18 THEN 1910
2240 GOTO 1920
2250 POSITION CH,CV
2260 FOR XX=1 TO 4:GOSUB 2800:NEXT XX
2270 XX$="Password found and confirmed"
2280 GOSUB 2760
2290 POSITION 0,20:POKE 752,0
2300 PRINT "Strike any key to continue ... ";
2310 POKE 764,255:GET #1,K
2320 SETCOLOR 1,0,14:SETCOLOR 2,0,0
2330 SETCOLOR 4,3,0
2340 PRINT CHR$(125);M$
2350 PRINT "Link is established for"
2360 XX$=CN$(CN(CN,1),CN(CN,2)):GOSUB 2760
2370 PRINT
2380 POSITION 0,19
2390 PRINT "Unauthorized access is ILLEGAL. Are you"
2400 PRINT "sure you want to procede (Y/N)? ";
2410 POKE 764,255:GET #1,K
2420 IF K=78 OR K=110 THEN 170
2430 IF  NOT (K=89 OR K=121) THEN 2410
2440 PRINT CHR$(125);
2450 PRINT CN$(CN(CN,1),CN(CN,2)):PRINT
2460 PRINT PW$;" file ";
2470 PRINT INT(1000*RND(1)/1000)
2480 PRINT :PRINT "SYS GBAK 144."
2490 PRINT "Authorized personnel only"
2500 PRINT :PRINT
2510 GOTO 2620
2520 IF INT(4*RND(1))>1 THEN 2620
2530 PRINT CHR$(125);M$
2540 XX$="WARNING!":GOSUB 2760:PRINT
2550 FOR N=1 TO 4:PRINT CHR$(253);:NEXT N
2560 PRINT "Telephone trace is on ..."
2570 PRINT "ABORT QUICKLY!"
2580 POSITION 0,20
2590 PRINT "Strike the X key to abort ...";
2600 POKE 764,255:GET #1,K
2610 GOTO 170
2620 FOR N=1 TO 500*RND(1)+500
2630 PRINT CHR$(PEEK(1000+N));
2640 NEXT N
2650 XX$="PARITY ERROR":GOSUB 2760:PRINT
2660 PRINT CHR$(253)
2670 GOTO 2520
2680 DATA DEPARTMENT OF DEFENSE
2690 DATA INTERNAL REVENUE SERVICE
2700 DATA IBM CORPORATION
```

```
2710 DATA GENERAL MOTORS CORPORATION
2720 DATA AMERIBANK
2730 DATA STANFORD UNIVERSITY
2740 DATA Other (to Specify)
2750 DATA Exit the program
2760 FOR LX=1 TO LEN(XX$)
2770 PRINT CHR$(ASC(XX$(LX))+128);
2780 NEXT LX
2790 RETURN
2800 FOR SN=14 TO 0 STEP -2
2810 SOUND 0,40,10,SN
2820 FOR SD=1 TO 2:NEXT SD:NEXT SN
2830 SOUND 0,0,0,0
2840 RETURN
```

Program 92 SEA BATTLE

Dum-ta-da-dummmm
Ta-da-ta-dum-dum
Tee-dee-ta-dum

—From the theme of *Victory at Sea*

```
10 REM ** BATTLESHIP GAME **
20 REM
30 DIM M$(80),H$(40),CL$(40),Y$(40)
40 DIM CM(10,10),PM(10,10),PC$(1),D$(40)
50 FOR K=1 TO 40
60 CL$(K)=CHR$(32):Y$(K)=CHR$(42)
70 NEXT K
80 M$=CL$(1,15):M$(16)="BATTLESHIP"
90 M$(26)=CHR$(155):M$(27)=Y$
100 H$=CL$(1,22)
110 H$(23)="A B C D E F G H"
120 POKE 82,0:OPEN #1,4,0,"K:"
130 GRAPHICS 0
140 PRINT CHR$(125);M$
150 PRINT "Do you want to see the instructions"
160 PRINT "(Y/N)?";
170 POKE 764,255:GET #1,K
180 IF K=78 OR K=110 THEN 350
190 IF  NOT (K=89 OR K=121) THEN 170
200 POKE 752,1
210 PRINT CHR$(125);M$
220 FOR K=1 TO 12:READ D$
230 FOR X=1 TO LEN(D$)
240 CH=ASC(D$(X,X))
250 IF CH=35 THEN PRINT :GOTO 310
260 IF CH=37 THEN CH=44
270 PRINT CHR$(CH);
280 SOUND 0,10,8,10
290 FOR T=1 TO 10:NEXT T
300 SOUND 0,0,0,0
```

```
310 NEXT X:PRINT :NEXT K
320 POSITION 0,20:POKE 752,0
330 PRINT "Strike any key to begin ...";
340 POKE 764,255:GET #1,K
350 E=43:PS=5:CS=5
360 GRAPHICS 0:PRINT CHR$(125);M$
370 POKE 752,1
380 PRINT "PLEASE WAIT ..."
390 FOR R=1 TO 8:FOR C=1 TO 8
400 PM(R,C)=E:CM(R,C)=E
410 NEXT C:NEXT R
420 FOR K=1 TO 5
430 R=INT(8*RND(1)+1)
440 C=INT(8*RND(1)+1)
450 IF PM(R,C)=42 THEN 430
460 PM(R,C)=42
470 NEXT K
480 FOR K=1 TO 5
490 R=INT(8*RND(1)+1)
500 C=INT(8*RND(1)+1)
510 IF CM(R,C)=42 THEN 490
520 CM(R,C)=42
530 NEXT K
540 SETCOLOR 1,12,0:SETCOLOR 2,12,14
550 PRINT CHR$(125);M$
560 PRINT H$
570 POSITION 0,20:PRINT Y$;
580 PRINT "*=Your GOOD ships";CL$(1,2);
590 PRINT "%=Your DEAD ships"
600 POSITION 0,22:PRINT "+=Untried areas";
610 PRINT CL$(1,4);"#=Enemy DEAD ships"
620 POSITION 12,23:PRINT "<RETURN>=ABORT";
630 POSITION 0,5
640 FOR R=1 TO 8:POKE 85,20:PRINT R;
650 FOR C=1 TO 8
660 POKE 85,C*2+20
670 PRINT CHR$(PM(R,C));CHR$(32);:NEXT C
680 PRINT
690 NEXT R
700 POSITION 0,5:PRINT "Computer has"
710 PRINT CS;" ship";
720 IF CS<>1 THEN PRINT "s";
730 POSITION 0,8:PRINT "You have"
740~PRINT PS;" ship";
750 IF PS<>1 THEN PRINT "s";
760 POSITION 0,15
770 POKE 752,0
780 PRINT "Where do you wish to fire?"
790 POSITION 4,16:PRINT CL$(1,4);:POSITION 4,16
800 PRINT "Row (1-8)";
810 POKE 764,255:GET #1,K
820 IF K=155 THEN 1320
830 IF K<49 OR K>56 THEN PRINT CHR$(253);:GOTO 790
840 PR=K-48
850 PRINT PR
860 POSITION 4,17:PRINT CL$(1,4);:POSITION 4,17
```

```
870 PRINT "Column (A-H)";
880 POKE 764,255:GET #1,K
890 POKE 752,1
900 IF K=155 THEN 1320
910 IF K>90 THEN K=K-32
920 IF K<65 OR K>72 THEN PRINT CHR$(253);:GOTO 860
930 PC$=CHR$(K)
940 PRINT PC$
950 PC=ASC(PC$)-64
960 IF PM(PR,PC)=42 THEN 1330
970 IF PM(PR,PC)<>43 THEN 1030
980 PM(PR,PC)=32
990 FOR SS=14 TO 0 STEP -2
1000 SOUND 0,100,10,SS:FOR SD=1 TO 4
1010 NEXT SD:NEXT SS
1020 SOUND 0,0,0,0
1030 IF CM(PR,PC)<>42 THEN 1060
1040 PM(PR,PC)=35:CM(PR,PC)=43:CS=CS-1
1050 GOSUB 1120
1060 CC=INT(8*RND(1)+1):CR=INT(8*RND(1)+1)
1070 IF PM(CC,CR)<>42 THEN 1110
1080 PM(CC,CR)=37
1090 PS=PS-1
1100 GOSUB 1120
1110 GOTO 540
1120 FOR SS=14 TO 0 STEP -2
1130 SOUND 0,200,8,SS:FOR SD=1 TO 20
1140 NEXT SD:NEXT SS
1150 SOUND 0,0,0,0
1160 IF PS>1 THEN 1260
1170 GRAPHICS 0
1180 PRINT CHR$(125);M$
1190 POKE 85,12:PRINT "*** SORRY ***"
1200 PRINT :PRINT "I just sank your last battleship"
1210 PRINT "Would you like to play again (Y/N)";
1220 POKE 764,255:GET #1,K
1230 IF K=78 OR K=110 THEN 1320
1240 IF K=89 OR K=121 THEN 350
1250 GOTO 1220
1260 IF CS>0 THEN 1310
1270 GRAPHICS 0
1280 PRINT CHR$(125);M$
1290 POKE 85,11:PRINT "*** YOU WIN ***"
1300 GOTO 1210
1310 RETURN
1320 POKE 82,2:GRAPHICS 0:END
1330 PS=PS-1:GOSUB 1120
1340 POKE 85,19:PRINT "You just sank"
1350 POKE 85,19:PRINT "your own ship"
1360 FOR T=1 TO 500:NEXT T
1370 PM(PR,PC)=37
1380 GOTO 1030
1390 DATA This is a computerized version of the
1400 DATA board game% 'BATTLESHIP.'
1410 DATA #Your objective is to sink the com-
1420 DATA puter's ships by firing at coordinates
```

```
1430 DATA on a map.#
1440 DATA But there are a couple of catches.
1450 DATA First% you don't know the coordinates
1460 DATA of the enemy ships. And second% the
1470 DATA enemy is firing back at you!
1480 DATA #You and the computer both hive 5 ships
1490 DATA at the outset. The first to sink all
1500 DATA of the opponent's ships wins the game.
```

Program 93 MINER

Oh, ----! So much for the canary!

—From *A Treasury of Famous Last Words*

```
10 REM ** COAL MINER **
20 REM
30 DIM M$(80),NM$(6),CM$(40),CL$(40)
40 FOR K=1 TO 13:M$(K)=CHR$(32):NEXT K
50 M$(14)="COAL MINER":M$(24)=CHR$(155)
60 FOR K=1 TO 36
70 M$(24+K)=CHR$(96):CL$(K)=CHR$(32)
80 NEXT K
90 OPEN #1,4,0,"K:"
100 GRAPHICS 0:PRINT CHR$(125);M$:PRINT
110 PRINT "You are a miner who is lost in a"
120 PRINT "deep mine. It is too dark to see"
130 PRINT "anything, but you are an expert"
140 PRINT "digger. You can dig through any-"
150 PRINT "thing but big rocks."
160 PRINT
170 PRINT "Obviously, your objective is to dig"
180 PRINT "your way out of the mine, and do it"
190 PRINT "as efficiently as possible."
200 PRINT
210 PRINT "Go for the fresh air in the upper"
220 PRINT "left-hand corner of the screen."
230 POSITION 2,20
240 PRINT "Strike any key to begin ...";
250 POKE 754,255:GET #1,K
260 BM=32000
270 GRAPHICS 3
280 SETCOLOR 0,3,4:SETCOLOR 1,10,12
290 SETCOLOR 2,0,0:SETCOLOR 4,0,0
300 MC=1:GC=2:OC=3:BC=0
310 NM=0
320 POKE 752,1
330 PRINT CHR$(125)
340 PRINT "PLEASE WAIT ..."
350 COLOR OC:PLOT 0,0:DRAWTO 39,0
360 DRAWTO 39,19:DRAWTO 0,19
370 DRAWTO 0,0
380 COLOR GC
```

```
390 FOR LL=1 TO 3
400 PLOT 1,LL:DRAWTO 4,LL
410 NEXT LL
420 COLOR MC:PLOT 37,17
430 COLOR OC
440 FOR N=1 TO 120
450 X=INT(38*RND(1)+1)
460 Y=INT(18*RND(1)+1)
470 LOCATE X,Y,TH:IF TH<>BC THEN 450
480 PLOT X,Y
490 NEXT N
500 PRINT CHR$(125)
510 FOR SS=14 TO 0 STEP -2
520 SOUND 0,40,10,SS
530 FOR SD=1 TO 2:NEXT SD:NEXT SS
540 SOUND 0,0,0,0
550 PRINT "Number of moves:"
560 GOSUB 1150
570 PRINT
580 PRINT "Use ARROW keys to move."
590 PRINT "Strike RETURN to abort.";
600 CH=37:CV=17:NH=CH:NV=CV
610 GET #1,K
620 NH=CH:NV=CV
630 IF K=155 THEN 910
640 IF  NOT (K=42 OR K=43 OR K=45 OR K=61) THEN 610
650 IF K=43 AND CH>1 THEN NH=CH-1:GOTO 700
660 IF K=42 AND CH<38 THEN NH=CH+1:GOTO 700
670 IF K=61 AND CV<18 THEN NV=NV+1:GOTO 700
680 IF K=45 AND CV>1 THEN NV=NV-1:GOTO 700
690 GOTO 610
700 LOCATE NH,NV,CC
710 IF CC=GC THEN 920
720 NM=NM+1:GOSUB 1150
730 IF CC=BC THEN 850
740 CM$="OUCH!! $#%&@ ROCK!"
750 GOSUB 1200
760 FOR SN=1 TO 50
770 SOUND 0,INT(100*RND(1)+20),10,10
780 NEXT SN
790 SOUND 0,0,0,0
800 FOR T=1 TO 400:NEXT T
810 CM$=CL$(1,18):GOSUB 1200
820 SOUND 0,0,0,0
830 POKE 764,255
840 GOTO 610
850 SOUND 0,100,10,10:SOUND 0,0,0,0
860 COLOR BC:PLOT CH,CV
870 COLOR MC:PLOT NH,NV
880 COLOR MC:PLOT NH,NV
890 CH=NH:CV=NV
900 GOTO 610
910 QF=1
920 GRAPHICS 0:PRINT CHR$(125);M$
930 IF QF=0 THEN PRINT "Ahh. Fresh air!":GOTO 970
940 PRINT "You aborted the attempt at ";NM;" moves,"
```

```
950 PRINT "but that doesn't count.":PRINT
960 QF=0:NM=BM:GOTO 1030
970 FOR SN=1 TO 4:FOR SS=50 TO 10 STEP -1
980 SOUND 0,SS,10,10
990 NEXT SS:NEXT SN
1000 SOUND 0,0,0,0
1010 PRINT "You did the job in ";NM;" moves."
1020 PRINT
1030 IF NM<BM THEN BM=NM
1040 PRINT "Best so far is ";
1050 IF BM>=32000 THEN PRINT "not relevant";:GOTO 1070
1060 PRINT BM;
1070 PRINT CHR$(46)
1080 POSITION 2,20
1090 PRINT "Want to see if you can do better"
1100 PRINT "(Y/N)?";
1110 POKE 764,255:GET #1,K
1120 IF K=89 OR K=121 THEN 270
1130 IF  NOT (K=78 OR K=110) THEN 1110
1140 PRINT CHR$(125):END
1150 NM$=STR$(NM)
1160 FOR N=0 TO LEN(NM$)-1
1170 POKE 40819+N,PEEK(ADR(NM$)+N)-32
1180 NEXT N
1190 RETURN
1200 FOR N=0 TO LEN(CM$)-1
1210 POKE 40850+N,PEEK(ADR(CM$)+N)-32
1220 NEXT N
1230 RETURN
```

Program 94 ASTEROIDS

It may be that the race is not always to the swift, nor the battle to the strong—but that's the way to bet.

—Damon Runyon

```
10 REM ** ASTEROIDS **
20 DIM M$(80)
30 OPEN #1,4,0,"K:":POKE 82,0
40 FOR K=1 TO 15:M$(LEN(M$)+1)=" ":NEXT K
50 M$(16)="ASTEROIDS":M$(25)=CHR$(155)
60 FOR K=26 TO 65:M$(K)="*":NEXT K
70 GRAPHICS 0
80 SETCOLOR 2,0,12:SETCOLOR 1,0,0
90 SETCOLOR 4,10,8
100 PRINT M$
110 PRINT "YOUR MISSION IS TO NAVIGATE YOUR CRAFT"
120 PRINT "THROUGH AN ASTEROID BELT. YOU ARE"
130 PRINT "ABLE TO MOVE ONLY UP AND DOWN -- AND"
140 PRINT "EACH WAVE OF ASTEROIDS BECOMES MORE"
150 PRINT "DEADLY."
160 PRINT :PRINT
170 PRINT "SELECT YOUR PILOT RANKING:"
```

```
180 PRINT
190 PRINT CHR$(127);"(B)EGINNER"
200 PRINT CHR$(127);"(E)XPERT"
210 SOUND 0,RND(1)*200,10,8
220 IF PEEK(764)=255 THEN 210
230 GET #1,K
240 IF K=ASC("B") THEN DL=75:GOTO 270
250 IF K=ASC("E") THEN DL=5:GOTO 270
260 GOTO 210
270 GRAPHICS 5:PRINT M$;
280 POKE 766,1
290 POKE 657,10:PRINT CHR$(28);" -UP";
300 POKE 657,22:PRINT CHR$(29);" -DOWN"
310 POKE 766,0:POKE 752,1
320 SOUND 0,0,0,0
330 SETCOLOR 0,0,8:COLOR 1
340 D=0
350 FOR C=0 TO 79
360 R=INT(RND(1)*48)
370 PLOT C,R
380 R=INT(RND(1)*48)
390 PLOT C,R
400 SOUND 1,RND(1)*200,10,8
410 FOR U=1 TO 4:NEXT U
420 NEXT C
430 COLOR 0:PLOT 2,11:PLOT 2,12
440 COLOR 3:C=2:R=10:PLOT C,R
450 SOUND 1,2,0,4
460 GET #1,K
470 FOR C=2 TO 78
480 SOUND 0,200,10,8
490 FOR U=1 TO 5:NEXT U
500 SOUND 0,0,0,0
510 COLOR 0
520 PLOT C-1,R
530 K=PEEK(764)
540 IF  NOT (K=14 OR K=15) THEN 590
550 GOSUB 1010
560 IF K=15 AND R<39 THEN R=R+1
570 IF K=14 AND R>0 THEN R=R-1
580 POKE 764,255
590 COLOR 3:PLOT C,R
600 LOCATE C+1,R,COR
610 IF COR=1 THEN GOTO 770
620 REM COLOR 2:PLOT C,R
630 FOR T=1 TO DL:NEXT T
640 NEXT C
650 COLOR 0:PLOT C-1,R
660 FOR C=1 TO 3:GOSUB 950:NEXT C
670 COLOR 1
680 FOR C=0 TO 79:R=INT(RND(1)*48)
690 PLOT C,R
700 SOUND 1,RND(1)*200,10,8
710 NEXT C
720 COLOR 2
730 C=2:R=INT(RND(1)*48)
```

```
740 PLOT C,R:COLOR 0
750 PLOT C+1,R:PLOT C+2,R
760 D=D+1000:GOTO 450
770 FOR T=20 TO 0 STEP -1
780 SETCOLOR 2,0,ABS(T-5)
790 SOUND 0,200,4,T
800 SOUND 1,255,4,T
810 SOUND 2,225,4,T
820 SOUND 3,150,4,T
830 FOR T1=1 TO 15:NEXT T1
840 NEXT T
850 D=D+250*C
860 GRAPHICS 0:PRINT M$
870 PRINT
880 PRINT "YOU HAVE TRAVELED ";D;" KILOMETERS"
890 PRINT
900 PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y/N)?"
910 GET #1,K
920 IF K=89 OR K=121 THEN 270
930 IF  NOT (K=78 OR K=110) THEN 910
940 POKE 82,2:GRAPHICS 0:END
950 FOR T=15 TO 0 STEP -1
960 SOUND 0,80,10,T
970 NEXT T
980 SOUND 0,0,0,0
990 FOR T=1 TO 5:NEXT T
1000 RETURN
1010 SOUND 2,50,10,10
1020 FOR U=1 TO 4:NEXT U
1030 SOUND 2,0,0,0
1040 RETURN
```

Program 95 WILDCATTER

Thar's oil in them thar hills.

—Anonymous

```
10 REM ** WILDCATTER **
20 REM
30 DIM M$(80),L(100),XX$(40),PL(100)
40 FOR K=1 TO 15:M$(K)=CHR$(32):NEXT K
50 M$(16)="WILDCATTER":M$(26)=CHR$(155)
60 FOR K=1 TO 40:M$(26+K)=CHR$(42):NEXT K
70 POKE 82,0:OPEN #1,4,0,"K:"
80 GRAPHICS 0
90 SETCOLOR 1,0,0:SETCOLOR 2,0,15
100 SETCOLOR 4,3,0
110 PRINT CHR$(125);M$
120 PRINT "You are an old-West kind of oilman who"
130 PRINT "is hoping to get rich by drilling for"
140 PRINT "oil at highly speculative locations."
150 PRINT
160 PRINT "A benevolent benefactor has staked you"
170 PRINT "to the tune of $2-MILLION."
180 PRINT :PRINT "You have free access to 100 different"
```

```
190 PRINT "drilling locations. The drilling cost"
200 PRINT "is on the order of $50 per foot."
210 POSITION 0,20
220 PRINT "Strike any key to begin the venture ...";
230 POKE 764,255:GET #1,K
240 PRINT CHR$(125);M$
250 PRINT "Please wait a moment ..."
260 FOR K=1 TO 100
270 L(K)=INT(10000*RND(1)+4000)
280 NEXT K
290 AC=2000000
300 R=0
310 SETCOLOR 1,0,15:SETCOLOR 2,0,0
320 PRINT CHR$(125);M$
330 PRINT "Select a drilling location (1-100):"
340 PRINT
350 GOSUB 920:PL=XX
360 IF PL>0 AND PL<101 THEN 380
370 PRINT "0 thru 100, please. Try again ...":GOTO 350
380 D=L(PL)
390 POKE 752,1
400 PRINT CHR$(125);M$:PRINT
410 NC=AC
420 POSITION 0,5
430 PRINT "You have $";NC
440 POSITION 0,9
450 PRINT "Your well is ";R;" feet deep"
460 SOUND 0,50,8,R/1000
470 FOR T=1 TO 100:NEXT T
480 SOUND 1,100,10,15:SOUND 1,0,0,0
490 R=R+500:WC=R*50
500 IF R>=10000 THEN 730
510 NC=AC-WC
520 IF R<D THEN 420
530 PRINT CHR$(125);M$
540 FOR SN=1 TO 4:FOR SS=150 TO 75 STEP -1
550 SOUND 0,SS,10,14:NEXT SS
560 NEXT SN:SOUND 0,0,0,0
570 PRINT :POKE 85,8
580 PRINT "*** YOU JUST STRUCK OIL ***"
590 WD=100000*INT(8*RND(1)+7)
600 PRINT :PRINT "You made $";WD;
610 PRINT " from the well"
620 AC=NC+WD
630 L(PL)=11000
640 PRINT :PRINT "You now have $";AC
650 FOR T=1 TO 200:NEXT T
660 POSITION 0,20
670 POKE 752,0
680 PRINT "Want to try again (Y/N)?";
690 POKE 764,255:GET #1,K
700 IF K=89 OR K=121 THEN 300
710 IF  NOT (K=78 OR L=110) THEN 690
720 GRAPHICS 0:POKE 82,2:END
730 PRINT CHR$(125);M$
740 FOR SN=80 TO 100:FOR SS=1 TO 10
```

```
750 SOUND 0,SN+ABS(SS-5),10,10
760 NEXT SS:NEXT SN
770 SOUND 0,0,0,0
780 PRINT
790 PRINT "You have yourself a dry hole."
800 PRINT "You lost $";WC;" on this."
810 AC=AC-WC
820 PRINT
830 PRINT "You still have $",AC
840 IF AC<0 THEN 860
850 GOTO 660
860 PRINT :PRINT "You have gone broke, and your bene-"
870 PRINT "factor is looking for you. I strongly"
880 PRINT "suggest you avoid the OIL business"
890 PRINT "in the future."
900 FOR T=1 TO 1000:NEXT T
910 POKE 82,2:GRAPHICS 0:END
920 INPUT XX$
930 FOR NX=1 TO LEN(XX$)
940 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 960
950 PRINT "INVALID ENTRY. TRY AGAIN ...":GOTO 920
960 NEXT NX
970 XX=VAL(XX$)
980 RETURN
```

Program 96 MOON LANDER

Hey, buddy. Spare a quarter for a game?

—Overheard outside a video arcade in Cincinnati

```
10 REM ** LUNAR-LANDER GAME **
20 REM
30 DIM M$(80),Y$(40),CL$(40),D$(40)
40 DIM A$(20),S$(20),F$(20),B$(20),R$(20)
50 DIM I$(40),K$(80),XX$(10)
60 FOR K=1 TO 40
70 CL$(K)=CHR$(32):Y$(K)=CHR$(37)
80 NEXT K
90 M$=CL$(1,14):M$(15)="LUNAR LANDER"
100 M$(27)=CHR$(155):M$(28)=Y$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 GRAPHICS 0:SETCOLOR 1,0,0:SETCOLOR 2,0,15
130 POKE 752,1
140 PRINT CHR$(125);M$
150 POKE 752,1:POSITION 0,3
160 FOR N=1 TO 16:READ D$
170 IF D$="#" THEN PRINT :GOTO 250
180 FOR X=1 TO LEN(D$)
190 IF D$(X,X)="&" THEN PRINT CHR$(44);:GOTO 210
200 PRINT D$(X,X);
210 SOUND 0,20,8,10
220 FOR T=1 TO 5:NEXT T
```

```
230 SOUND 0,0,0,0
240 NEXT X:PRINT
250 NEXT N
260 DATA You are the pilot of a lunar-lander
270 DATA module. Your objective is to land the
280 DATA module and crew safely on the surface
290 DATA of the moon. ,#
300 DATA You must retro-fire your engines in
310 DATA order to control your rate of descent.
320 DATA There is& of course& the risk of crash-
330 DATA ing; either because the rate of descent
340 DATA is too high& or you've burned all the
350 DATA available fuel. ,#
360 DATA Three things can happen to you& and
370 DATA two of them are bad. Keep cool& and
380 DATA control the module by entering burn-
390 DATA rate values.
400 PRINT
410 FOR N=1 TO 4:GOSUB 1250:NEXT N
420 PRINT "Incidentally, using burn rates of"
430 PRINT "75 or more destroys the engines."
440 POSITION 0,23:POKE 752,0
450 PRINT "Strike any key to begin ...";
460 POKE 764,255:GET #1,K
470 A$="Altitude:"
480 S$="Speed:"
490 F$="Fuel:"
500 B$="Burn rate:"
510 R$="Rising"
520 D$="Descending"
530 A=500:F=250:S=50:BR=0
540 I$=M$(1,12):I$(13)="INSTRUMENT PANEL"
550 I$(29)=CHR$(155)
560 FOR K=1 TO 40:K$(29+K)=CHR$(61):NEXT K
570 PRINT CHR$(125)
580 POSITION 0,4:PRINT I$
590 POKE 85,3:PRINT A$,A
600 POKE 85,3:PRINT F$,F
610 POKE 85,3:PRINT S$,S
620 PRINT
630 POKE 85,3:PRINT B$,BR
640 IF F<=0 THEN BR=0:GOTO 740
650 PRINT :PRINT "You are ";
660 IF S>=0 THEN PRINT D$
670 IF S<0 THEN PRINT R$
680 POSITION 0,20
690 POKE 752,0
700 PRINT "Enter burn rate:";
710 GOSUB 1300:BR=XX
720 IF BR>=75 THEN 1090
730 SOUND 1,80-BR,8,INT(BR/5.5+2)
740 F=F-BR:IF F<=0 THEN 1200
750 S=S+10-BR:A=A-S
760 IM=(A+S*2+10)/10
770 IF A>=0 THEN 900
780 SETCOLOR 1,3,15:SETCOLOR 2,3,0
```

```
790 FOR N=1 TO 4:GOSUB 1250:NEXT N
800 FOR SS=14 TO 0 STEP -1
810 SOUND 0,200,8,SS
820 FOR SD=1 TO 10:NEXT SD:NEXT SS
830 SOUND 0,0,0,0
840 PRINT CHR$(125);M$
850 POSITION 0,4
860 SOUND 1,0,0,0
870 PRINT "You have buried the ship ";IM;" meters"
880 PRINT "into the lunar surface."
890 GOTO 990
900 IF IM>5 THEN 570
910 PRINT CHR$(125);M$
920 POSITION 4,14
930 SOUND 1,0,0,0
940 PRINT "** You have landed the ship **"
950 FOR N=1 TO 100
960 SOUND 0,100*RND(1)+20,10,10
970 NEXT N
980 SOUND 0,0,0,0
990 FOR N=1 TO 1000:NEXT N
1000 PRINT CHR$(125);M$
1010 SOUND 1,0,0,0
1020 SETCOLOR 1,0,0:SETCOLOR 2,0,15
1030 POKE 752,0
1040 PRINT "Do you want to try again (Y/N)? ";
1050 POKE 764,255:GET #1,K
1060 IF K=89 OR K=121 THEN 440
1070 IF  NOT (K=78 OR K=110) THEN 1050
1080 GRAPHICS 0:POKE 82,2:END
1090 FOR SN=14 TO 0 STEP -2
1100 SOUND 1,220,8,SN
1110 FOR SD=1 TO 20:NEXT SD:NEXT SN
1120 SOUND 1,0,0,0
1130 SETCOLOR 1,3,15:SETCOLOR 2,3,0
1140 PRINT CHR$(125);M$:PRINT :PRINT
1150 PRINT "Burn Rate is too HIGH.";CL$(1,4)
1160 PRINT
1170 PRINT "THIS HAS COMPLETELY DESTROYED YOUR SHIP"
1180 PRINT :PRINT
1190 GOTO 990
1200 PRINT
1210 PRINT "You have EXHAUSTED YOUR FUEL SUPPLY."
1220 FOR N=1 TO 2:GOSUB 1250:NEXT N
1230 FOR T=1 TO 300:NEXT T
1240 GOTO 780
1250 FOR SS=200 TO 100 STEP -1
1260 SOUND 0,SS,10,10
1270 NEXT SS
1280 SOUND 0,0,0,0
1290 RETURN
1300 INPUT XX$
1310 FOR NX=1 TO LEN(XX$)
1320 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 1350
1330 PRINT "INVALID ENTRY. TRY AGAIN ..."
1340 PRINT CHR$(253);:GOTO 1300
```

```
1350 NEXT NX
1360 XX=VAL(XX$)
1370 POKE 752,1
1380 RETURN
```

Program 97 STOCK MARKET

"Dow Jones is up today."
"Oh, yeh? How long was he in bed?"

—Overheard at a bus stop in Miami Beach

```
10 REM ** STOCK MARKET **
20 REM
30 DIM N$(250),N(10,2),M$(80),P(10),H(10)
40 DIM CL$(40),D$(40),XX$(10)
50 FOR K=1 TO 14:M$(K)=CHR$(32):NEXT K
60 M$(15)="STOCK MARKET":M$(27)=CHR$(155)
70 FOR K=1 TO 40
80 M$(27+K)=CHR$(42):CL$(K)=CHR$(32)
90 NEXT K
100 POKE 82,0:OPEN #1,4,0,"K:"
110 GRAPHICS 0
120 SETCOLOR 1,13,0:SETCOLOR 2,13,14
130 SETCOLOR 4,1,2
140 PRINT CHR$(125);M$:PRINT
150 PRINT "This is a one player game where you "
160 PRINT "buy and sell stocks in order to make"
170 PRINT "money. You start with $100,000. There"
180 PRINT "is a selection of 10 stocks that you "
190 PRINT "can invest in. You can buy or sell as"
200 PRINT "many shares as you have money for."
210 PRINT "You can tell how the market is doing"
220 PRINT "by watching the TV reports."
230 POSITION 0,20
240 PRINT "Strike any key to begin ...";
250 POKE 764,255:GET #1,K
260 AC=100000:NW=AC
270 FOR K=1 TO 10
280 READ D$:READ P:P(K)=P
290 LD=LEN(D$)-1
300 N(K,1)=LEN(N$)+1:N(K,2)=N(K,1)+LD
310 N$(LEN(N$)+1)=D$
320 H(K)=0
330 NEXT K
340 PRINT CHR$(125);M$
350 FOR K=1 TO 10
360 PRINT K;
370 POKE 85,5:PRINT N$(N(K,1),N(K,2));
380 POKE 85,30:PRINT P(K)
390 NEXT K
400 PRINT
410 PRINT "Your net worth is $";NW
420 PRINT
```

```
430 PRINT "Want a portfolio report (Y/N)? ";
440 POKE 764,255:GET #1,K
450 IF K=78 OR K=110 THEN 540
460 IF  NOT (K=89 OR K=121) THEN 440
470 PRINT CHR$(125);M$
480 FOR K=1 TO 10
490 PRINT K;
500 POKE 85,5:PRINT N$(N(K,1),N(K,2));
510 POKE 85,30:PRINT H(K)
520 NEXT K
530 GOSUB 1310
540 GOSUB 1360
550 PRINT "Do you wish to buy any stocks (Y/N)? ";
560 POKE 764,255:GET #1,K
570 GOSUB 1360
580 IF K=78 OR K=110 THEN 800
590 IF  NOT (K=89 OR K=121) THEN 560
600 GOSUB 1300
610 GOSUB 1360
620 PRINT "Which one (1-10)";
630 GOSUB 1410:L=XX
640 IF L<1 OR L>10 THEN 610
650 GOSUB 1360
660 PRINT "How many shares of #";L;" at $";P(L)
670 GOSUB 1410:W=XX
680 R=P(L)*W
690 PRINT "The price is $";R;
700 PRINT CL$(1,38-PEEK(85))
710 FOR T=1 TO 400:NEXT T
720 IF R<AC THEN 760
730 PRINT "You don't have enough money"
740 FOR T=1 TO 1000:NEXT T
750 GOTO 540
760 AC=AC-R
770 GOSUB 1310
780 H(L)=H(L)+W
790 GOSUB 1360
800 PRINT "Do you wish to sell any shares (Y/N)? ";
810 POKE 764,255:GET #1,K
820 IF K=78 OR K=110 THEN 980
830 IF  NOT (K=89 OR K=121) THEN 810
840 GOSUB 1360
850 PRINT "Which stock (1-10)";
860 GOSUB 1410:D=XX
870 IF D>10 OR D<1 THEN 850
880 GOSUB 1360
890 PRINT "You have ";H(D);" share";
900 IF H(D)<>1 THEN PRINT "s";
910 PRINT " of stock #";D
920 PRINT "How many do you wish to sell";
930 GOSUB 1410:Q=XX
940 IF Q<=H(D) THEN 970
950 PRINT "You don't have that many shares"
960 GOTO 800
970 AC=AC+P(D)*Q:H(D)=H(D)-Q
980 GOSUB 1310
```

```
990 PRINT "Want to quit now (Y/N)?"
1000 POKE 764,255:GET #1,K
1010 IF K=78 OR K=110 THEN 1060
1020 IF  NOT (K=89 OR K=121) THEN 1000
1030 PRINT CHR$(125);M$:PRINT :PRINT
1040 PRINT "Your net worth is: $";NW
1050 GRAPHICS 0:POKE 82,2:END
1060 PRINT
1070 PRINT "Stay tuned for another market report"
1080 SOUND 0,100,8,10
1090 FOR SN=0 TO 100
1100 SOUND 1,SN,10,6
1110 NEXT SN:SOUND 1,0,0,0
1120 FOR T=1 TO 50:NEXT T
1130 SOUND 0,0,0,0
1140 FOR K=1 TO 10
1150 P(K)=INT(P(K)*(2*RND(1))+5)
1160 NEXT K
1170 NW=AC
1180 FOR K=1 TO 10:NW=NW+H(K)*P(K):NEXT K
1190 GOTO 340
1200 DATA American Gong Telephone,70
1210 DATA Jim Antelope Farm Equip.,40
1220 DATA Colonel Motors,75
1230 DATA Lemon Computer,40
1240 DATA McRonalds Hamburger,65
1250 DATA Oklahoma Instruments,7
1260 DATA Pacific Poorfield Oil,45
1270 DATA 286th Nat. Bank,30
1280 DATA Useless Airlines,30
1290 DATA XYZ TV Network,75
1300 PRINT
1310 POSITION 0,16
1320 PRINT CL$(1,39);:POSITION 0,16
1330 PRINT "You have $";AC;" in cash";
1340 GOSUB 1360
1350 RETURN
1360 FOR LL=19 TO 22:POSITION 0,LL
1370 PRINT CL$(1,39);
1380 NEXT LL
1390 POSITION 0,19
1400 RETURN
1410 CV=PEEK(84):CH=PEEK(85)
1420 INPUT XX$
1430 FOR NX=1 TO LEN(XX$)
1440 IF XX$(NX,NX)>="0" AND XX$(NX,NX)<="9" THEN 1480
1450 PRINT "INVALID ENTRY. TRY AGAIN ..."
1460 POSITION CH,CV:PRINT CL$(1,38);
1470 POSITION CH,CV:GOTO 1420
1480 NEXT NX
1490 XX=VAL(XX$)
1500 RETURN
```

Program 98 HEADLINE GENERATOR

It ain't what you say, it's how you say it.

—Overheard in the editorial office of the *Daily Blatt*

```
10 REM ** COMPUTER-GENERATED HEADLINES **
20 REM
30 DIM A$(1000),A(50,2),M$(80)
40 DIM B$(1000),B(50,2),X$(40)
50 DIM C$(1000),C(50,2),Y$(40)
60 DIM CL$(40)
70 FOR K=1 TO 36
80 CL$(K)=CHR$(32):Y$(K)=CHR$(61)
90 NEXT K
100 M$=CL$(1,11)
110 M$(12)="TODAY'S HEADLINES"
120 M$(29)=CHR$(155):M$(30)=Y$
130 OPEN #1,4,0,"K:"
140 PRINT CHR$(125);M$:POKE 752,1
150 PRINT "This program suggests headlines for"
160 PRINT "the day's newspaper. It is your"
170 PRINT "newspaper, and you are the Editor-"
180 PRINT "in-Chief.":PRINT
190 PRINT "Simply follow some instructions that"
200 PRINT "will soon appear on the screen. The"
210 PRINT "computer will do everything else"
220 PRINT "after that.":PRINT CHR$(253)
230 FOR T=1 TO 200:NEXT T
240 PRINT "NOTICE: The authors of this program"
250 PRINT "cannot be sued for any libelous"
260 PRINT "headlines that your computer might"
270 PRINT "generate!"
280 POSITION 2,20:POKE 752,0
290 PRINT "Strike any key to begin ...";
300 GOSUB 1100
310 GOSUB 1080
320 PRINT CHR$(125);M$
330 PRINT "What is your first name?"
340 INPUT X$
350 IF LEN(X$)>0 AND LEN(X$)<20 THEN 380
360 PRINT "Aww, cut it out. Be real. Try again."
370 GOTO 340
380 FOR XX=1 TO LEN(X$)
390 CX=ASC(X$(XX))
400 IF CX>90 THEN CX=CX-32
410 X$(XX,XX)=CHR$(CX)
420 NEXT XX
430 X$(LEN(X$)+1)="'S GAZETTE"
440 X=INT((36-LEN(X$))/2)
450 M$=CL$(1,X):M$(LEN(M$)+1)=X$
460 M$(LEN(M$)+1)=CHR$(155)
```

```
470 M$(LEN(M$)+1)=Y$
480 PRINT CHR$(125);M$
490 PRINT "Enter some nouns such as:"
500 GOSUB 820:A$=C$:NA=N
510 FOR X=1 TO N
520 A(X,1)=C(X,1):A(X,2)=C(X,2)
530 NEXT X
540 PRINT CHR$(125);M$
550 PRINT "Enter some verbs such as:"
560 GOSUB 820:B$=C$:NB=N
570 FOR X=1 TO N
580 B(X,1)=C(X,1):B(X,2)=C(X,2)
590 NEXT X
600 PRINT CHR$(125);M$
610 PRINT "Enter more nouns such as:"
620 GOSUB 820:NC=N
630 PRINT CHR$(125);M$
640 POKE 85,2
650 X=INT(NA*RND(1)+1)
660 PRINT A$(A(X,1),A(X,2));CHR$(32);
670 X=INT(NB*RND(1)+1)
680 PRINT B$(B(X,1),B(X,2));CHR$(32);
690 X=INT(NC*RND(1)+1)
700 PRINT C$(C(X,1),C(X,2))
710 POSITION 2,19:POKE 752,0
720 PRINT "Strike the SPACE BAR to see another"
730 PRINT "headline (or the X key to end"
740 PRINT "this program.)...";
750 GOSUB 1100:GOSUB 1080
760 IF K=32 THEN 630
770 IF  NOT (K=88 OR K=120) THEN 750
780 GRAPHICS 0:END
790 DATA CAT,DOG,MOUSE,ELEPHANT,SHOOTS,MEETS
800 DATA BEATS UP,FALLS IN LOVE WITH
810 DATA SELF,HOUSE,TURTLE,LITTLE BUG
820 PRINT
830 C$=""
840 FOR N=1 TO 4:READ X$
850 POKE 85,5:PRINT X$:NEXT N
860 PRINT :PRINT "You can enter as many as 50 of them"
870 PRINT "-- the more, the better. Just end"
880 PRINT "your list with ***.":PRINT
890 GOSUB 1100
900 N=1
910 POSITION 2,14
920 IF PEEK(84)>20 THEN 910
930 CV=PEEK(84):CH=PEEK(85)
940 POSITION CH,CV:PRINT CL$(1,36-CH);
950 POSITION CH,CV
960 PRINT N;"--";CHR$(32);:INPUT X$
970 IF LEN(X$)<1 OR N=1 AND X$="***" THEN 920
980 FOR XX=1 TO LEN(X$)
990 CX=ASC(X$(XX))
1000 IF CX>90 THEN CX=CX-32
1010 X$(XX,XX)=CHR$(CX)
1020 NEXT XX
```

```
1030 IF X$="***" OR N>=50 THEN N=N-1:RETURN
1040 LX=LEN(X$)-1:LC=LEN(C$)+1
1050 C(N,1)=LC:C(N,2)=LC+LX
1060 C$(LC)=X$
1070 N=N+1:GOTO 920
1080 POKE 764,255:GET #1,K
1090 RETURN
1100 SS=80:GOSUB 1130
1110 SS=100:GOSUB 1130
1120 RETURN
1130 FOR SN=14 TO 0 STEP -2
1140 SOUND 0,SS,10,SN
1150 FOR SD=1 TO 5:NEXT SD
1160 NEXT SN
1170 SOUND 0,0,0,0
1180 RETURN
```

Program 99 KING PONG

Times do not change games, but rather the patience with which they are played.

—Earle C. Bootington

```
10 REM ** KINGPONG **
20 REM
30 DIM M$(80),P$(20),CL$(40),Y$(40)
40 DIM PC$(20)
50 FOR K=1 TO 40
60 CL$(K)=CHR$(160):Y$(K)=CHR$(20)
70 NEXT K
80 FOR K=1 TO 16:M$(K)=CHR$(32):NEXT K
90 M$(17)="KINGPONG"
100 M$(25)=CHR$(155):M$(26)=Y$
110 POKE 82,0:OPEN #1,4,0,"K:"
120 PRINT CHR$(125);M$:PRINT
130 POKE 752,1
140 PRINT "You have a chance to work with a lot"
150 PRINT "of new kinds of programs in this book."
160 PRINT "Well, here's your chance to work with"
170 PRINT "a variation of a rather old and "
180 PRINT "familiar game.":PRINT
190 PRINT "We're calling it ..."
200 FOR SS=0 TO 14 STEP 2:FOR SN=1 TO 10
210 SOUND 0,INT(100*RND(1)+20),10,SS
220 FOR SD=1 TO 2:NEXT SD:NEXT SN
230 NEXT SS
240 SOUND 0,0,0,0
250 P$="KINGPONG"
260 PRINT :POKE 85,14
270 FOR N=1 TO LEN(P$)
280 PRINT CHR$(ASC(P$(N))+128);
290 NEXT N
300 FOR SS=100 TO 80 STEP -1
```

```
310 FOR SE=14 TO 0 STEP -1
320 SOUND 0,SS,10,SE
330 NEXT SE:NEXT SS
340 SOUND 0,0,0,0
350 POSITION 0,20:POKE 752,0
360 PRINT "Select a paddle size (1-4):";
370 POKE 764,255:GET #1,K
380 POKE 752,1
390 IF K<49 OR K>52 THEN 370
400 PS=K-48
410 P$=""
420 FOR N=1 TO PS
430 P$(LEN(P$)+1)=CHR$(2)
440 P$(LEN(P$)+1)=CHR$(29)
450 P$(LEN(P$)+1)=CHR$(30)
460 NEXT N
470 FOR N=1 TO LEN(P$)
480 X=ASC(P$(N)):IF X=2 THEN X=32
490 PC$(N,N)=CHR$(X)
500 NEXT N
510 SETCOLOR 1,13,15:SETCOLOR 2,13,0
520 SETCOLOR 4,1,7
530 PRINT CHR$(125)
540 PRINT CL$;
550 FOR LL=1 TO 18:FOR CH=0 TO 39 STEP 39
560 POSITION CH,LL:PRINT CHR$(160);
570 NEXT CH:NEXT LL
580 POSITION 0,19:PRINT CL$;
590 POSITION 0,22:PRINT "SCORE:";
600 POKE 85,13:PRINT "Use UP and DOWN arrow keys";
610 BY1=10:BX1=38:BJ=1:BI=-1
620 PY1=10:PY2=PY1:SC=0
630 GOSUB 940
640 GOSUB 840
650 GOSUB 870
660 GOSUB 980
670 IF SF=0 THEN 860
680 SC=SC+1
690 POSITION 6,22:PRINT SC
700 IF SC<21 THEN 840
710 FOR SN=25 TO 50:FOR SE=1 TO 10
720 SOUND 0,SN+ABS(SE-5),10,10
730 NEXT SE:NEXT SN
740 SOUND 0,0,0,0
750 FOR T=1 TO 500:NEXT T
760 POSITION 0,22
770 FOR K=1 TO 39:PRINT CHR$(32);:NEXT K
780 POSITION 0,22:POKE 752,0
790 PRINT "Want to play again (Y/N)?";
800 POKE 764,255:GET #1,K
810 IF K=89 OR K=121 THEN POKE 752,1:GOTO 530
820 IF  NOT (K=78 OR K=110) THEN 800
830 POKE 82,2:GRAPHICS 0:END
840 T=INT(50*RND(1)+25):GOSUB 1160
850 SF=0
860 GOTO 650
```

```
870 K=PEEK(764):POKE 764,255
880 IF K=14 THEN 910
890 IF K=15 THEN 930
900 GOTO 970
910 PY2=PY1-1:IF PY2>1 THEN 940
920 GOTO 970
930 PY2=PY1+1:IF PY2>=20-PS THEN 970
940 POSITION 2,PY1:PRINT PC$;
950 PY1=PY2
960 POSITION 2,PY1:PRINT P$;
970 RETURN
980 BY2=BY1+BJ
990 BX2=BX1+BI
1000 IF BY2>=2 AND BY2<=18 THEN 1030
1010 BJ=BJ*(-1)
1020 SS=80:GOSUB 1190:GOTO 980
1030 IF BX2<38 AND BX2>=3 THEN 1120
1040 IF BX2=38 THEN SS=80:GOSUB 1190:BI=-1:RETURN
1050 BI=1
1060 FOR N=PY1 TO PY1+PS
1070 IF BY2=N THEN SS=120:GOSUB 1190:GOTO 980
1080 NEXT N
1090 SF=1:SS=200:GOSUB 1190
1100 POSITION BX1,BY1:PRINT CHR$(32);
1110 BY1=INT(17*RND(1)+2):BX1=38:BI=-1:RETURN
1120 POSITION BX1,BY1:PRINT CHR$(32);
1130 BY1=BY2:BX1=BX2
1140 POSITION BX1,BY1:PRINT CHR$(20);
1150 RETURN
1160 T=T-1:IF T<=0 THEN RETURN
1170 GOSUB 870
1180 GOTO 1160
1190 FOR SN=14 TO 0 STEP -2
1200 SOUND 0,SS,10,SN
1210 NEXT SN
1220 RETURN
```

Program 100 ADVENTURE REVISITED

Adventure is not outside a man; it is within.

—David Grayson

```
10 REM ** ADVENTURE REVISITED **
20 REM
30 DIM Y$(40),D$(40)
40 FOR K=1 TO 40:Y$(K)=CHR$(61):NEXT K
50 POKE 82,0:OPEN #1,4,0,"K:"
60 GRAPHICS 0:PRINT CHR$(125)
70 POKE 752,1
80 PRINT "THIS IS ORIGINAL ADVENTURE #12556789."
90 PRINT "I AM YOUR PUPPET AND YOU CAN"
100 PRINT "TELL ME TO MOVE AROUND. TO GET THINGS,"
```

```
110 PRINT "GO SOUTH,GO EASY,TAKE INVENTORY AND OTHER"
120 PRINT "THINGS THAT YOU KNOW BECAUSE YOU PLAID"
130 PRINT "MY PREVIOUS 12556788 FAMOUS ADVENTURES."
140 PRINT
150 PRINT "WE HAVE TO DISCUSS SOMETHING VERY IM-"
160 PRINT "PORTANT FIRST, THO."
170 GOSUB 710:GOSUB 750
180 PRINT CHR$(125);CHR$(253)
190 PRINT "YOU LOVE YOUR MOM, DONT YOU?"
200 GOSUB 710
210 PRINT "OF COURSE YOU DO!";CHR$(253)
220 PRINT "YOU LOVE YOUR COUNTRY DONT YOU??"
230 GOSUB 710
240 PRINT "OF COURSE YOU DO!";CHR$(253)
250 PRINT "AND YOU LOVE APPLE PIE, DONT YOU??"
260 GOSUB 710
270 PRINT "OF COURSE YOU DO!!!!!!"
280 FOR N=1 TO 8:PRINT CHR$(253);:NEXT N
290 PRINT
300 PRINT "WELL THIS IS A MOM, COUNTRY AND APPLE"
310 PRINT "PIE OPERATION. AND I SPENT YEARS AND YEARS"
320 PRINT "MAKING THIS PROGRAM!!!!!"
330 FOR N=1 TO 8:PRINT CHR$(253);:NEXT N
340 PRINT "SO DO NOT ACCEPT A PIRATED COPY OF"
350 PRINT "PROGRAM!!!!!!!"
360 FOR N=1 TO 8:PRINT CHR$(253);:NEXT N
370 PRINT
380 PRINT "OR ILL GET MAD!!!!!!!!!!"
390 PRINT
400 PRINT "WELL, HAPPY ADVENTURER, HIT THE ENTER KEY"
410 PRINT "TO START THIS ADVENTURE"
420 PRINT "(IF YOU DONT KNOW WHAT THE ENTER KEY IS IT"
430 POKE 752,0
440 PRINT "MEANS THAT YOU DONT HAVE A TRS-80)"
450 POKE 764,255:GET #1,K
460 PRINT CHR$(125);
470 PRINT "YOU ARE STANDING IN FRONT OF A SPOOKY"
480 PRINT "OLD HOUSE."
490 PRINT Y$
500 PRINT "VISIBLE ITEMS:";
510 FOR N=1 TO 11:READ D$
520 PRINT D$;CHR$(44);
530 NEXT N
540 POSITION 0,18
550 PRINT Y$
560 PRINT "COMMANDS ARE:(N)ORTH,(S)OUTH,(E)AST"
570 PRINT "(W)EST,(G)ET,TAKE (I)NVENTORY"
580 POSITION 0,9
590 POKE 752,0
600 PRINT "WHAT SHOULD I DO?";
610 POKE 764,255:GET #1,K
620 PRINT CHR$(K):GOSUB 710
630 PRINT CHR$(253);
640 PRINT :PRINT "A LARGE TREE FELL ON YOUR HEAD!!!!"
650 PRINT "YOURE DEAD -- DEAD, DEAD,DEAD!!!!!!"
660 PRINT :PRINT "THIS ADVENTURE IS OVER."
```

```
670 PRINT "YOU TOOK 1 STEPS"
680 PRINT "YOU FOUND 0 TREASURES"
690 FOR DD=1 TO 3:GOSUB 710:NEXT DD
700 POKE 82,2:PRINT CHR$(125):END
710 FOR T=1 TO 500:NEXT T:RETURN
720 DATA LARGE KEY,SMALL KEY,BRASS KEY,IRON KEY,GOLD KEY
730 DATA MONKEY,OLD GUM,LARGE GUM,SMALL GUM,BRASS MONKEY
740 DATA IRON GUM
750 POSITION 0,20:POKE 752,0
760 PRINT "Strike any key to continue";
770 POKE 764,255:GET #1,K
780 POKE 752,1
790 RETURN
```

Program 101 GOOD-BYE

So much for the nonsense. Now we gotta get back to work.

—Overheard from a private office in Columbus, Ohio

```
10 REM ** GOOD-BYE **
20 REM
30 DIM M$(200),MH$(40),P$(200),N$(40)
40 POKE 82,0:OPEN #1,4,0,"K:"
50 FOR K=1 TO 40
60 MH$(K)=CHR$(42):N$(K)=CHR$(32)
70 NEXT K
80 FOR N=1 TO 63
90 READ D:M$(N)=CHR$(D)
100 NEXT N
110 M$(64)="GOOD-BYE ..."
120 M$(LEN(M$)+1)="(Strike any key to say 'GOOD-BYE' to me.)"
130 M$(LEN(M$)+1)=N$
140 GRAPHICS 0
150 SETCOLOR 1,13,0:SETCOLOR 2,13,15
160 SETCOLOR 4,3,15
170 POKE 752,1:PRINT CHR$(125)
180 POSITION 0,9:PRINT MH$
190 POSITION 0,13:PRINT MH$
200 FOR N=2 TO LEN(M$)
210 P$=M$(N):P$(LEN(P$)+1)=M$(1,N-1)
220 POSITION 0,11
230 PRINT P$(1,40)
240 K=PEEK(764):IF K=255 THEN 300
250 POKE 82,2:GRAPHICS 0
260 FOR SN=1 TO 6:FOR SS=14 TO 0 STEP -2
270 SOUND 0,200,10,SS:SOUND 1,130,10,SS
280 FOR SD=1 TO 80:NEXT SD:NEXT SS:NEXT SN
290 END
300 SOUND 0,INT(100*RND(1)+10),10,10
310 FOR T=1 TO 2:NEXT T
320 SOUND 0,0,0,0
330 NEXT N:GOTO 200
```

```
340 DATA 73,32,65,77,32,74,85,83,84,32,65,32,86
350 DATA 73,83,73,84,79,82,32,84,79,32,84,72,73
360 DATA 83,32,80,76,65,78,69,84,46,32,73,84,39
370 DATA 83,32,84,73,77,69,32,70,79,82,32,77,69
380 DATA 32,84,79,32,71,79,32,78,79,87,46
```

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by David L. Heiserman

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